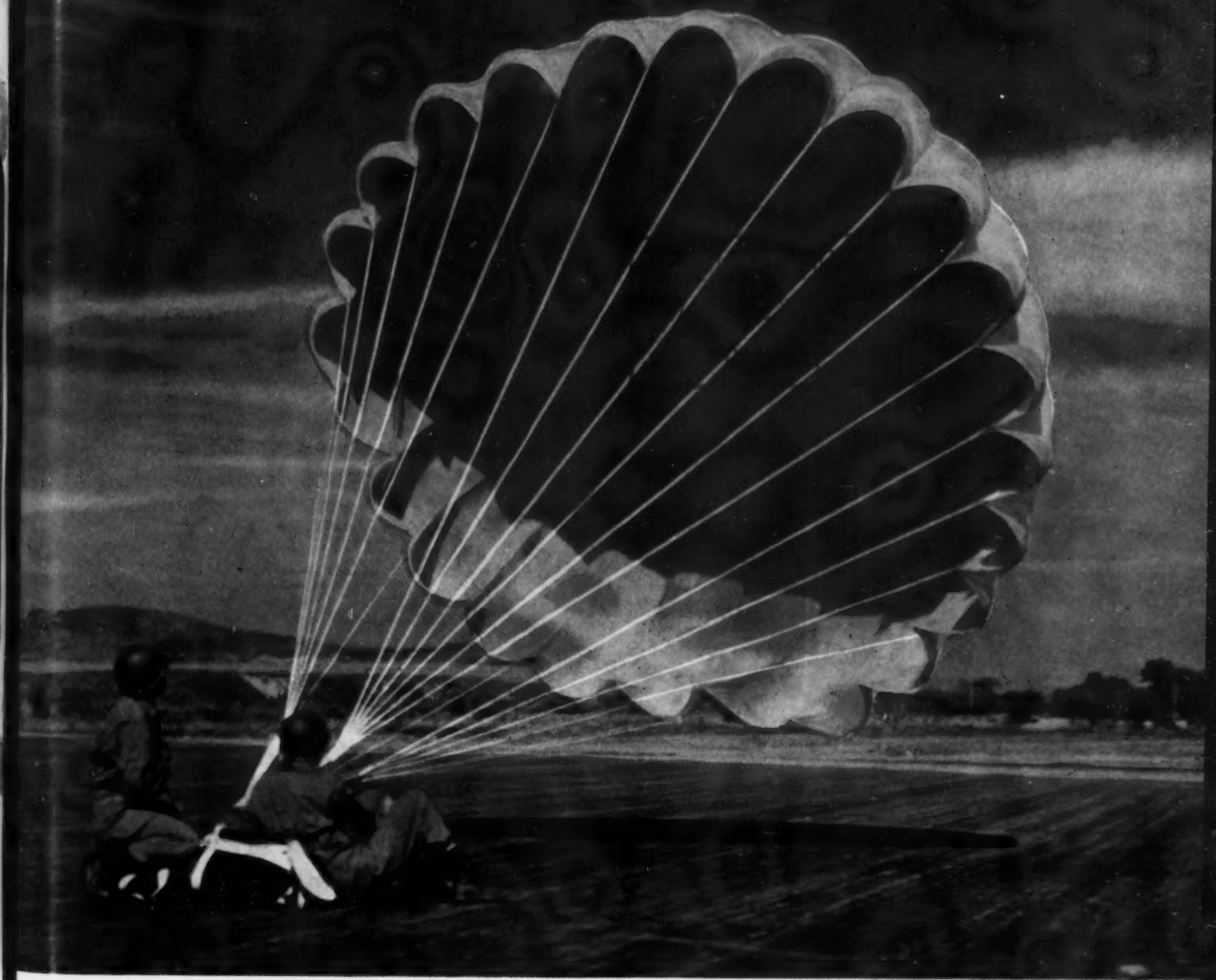
Textile World

TECHNOLOGY DEPT.

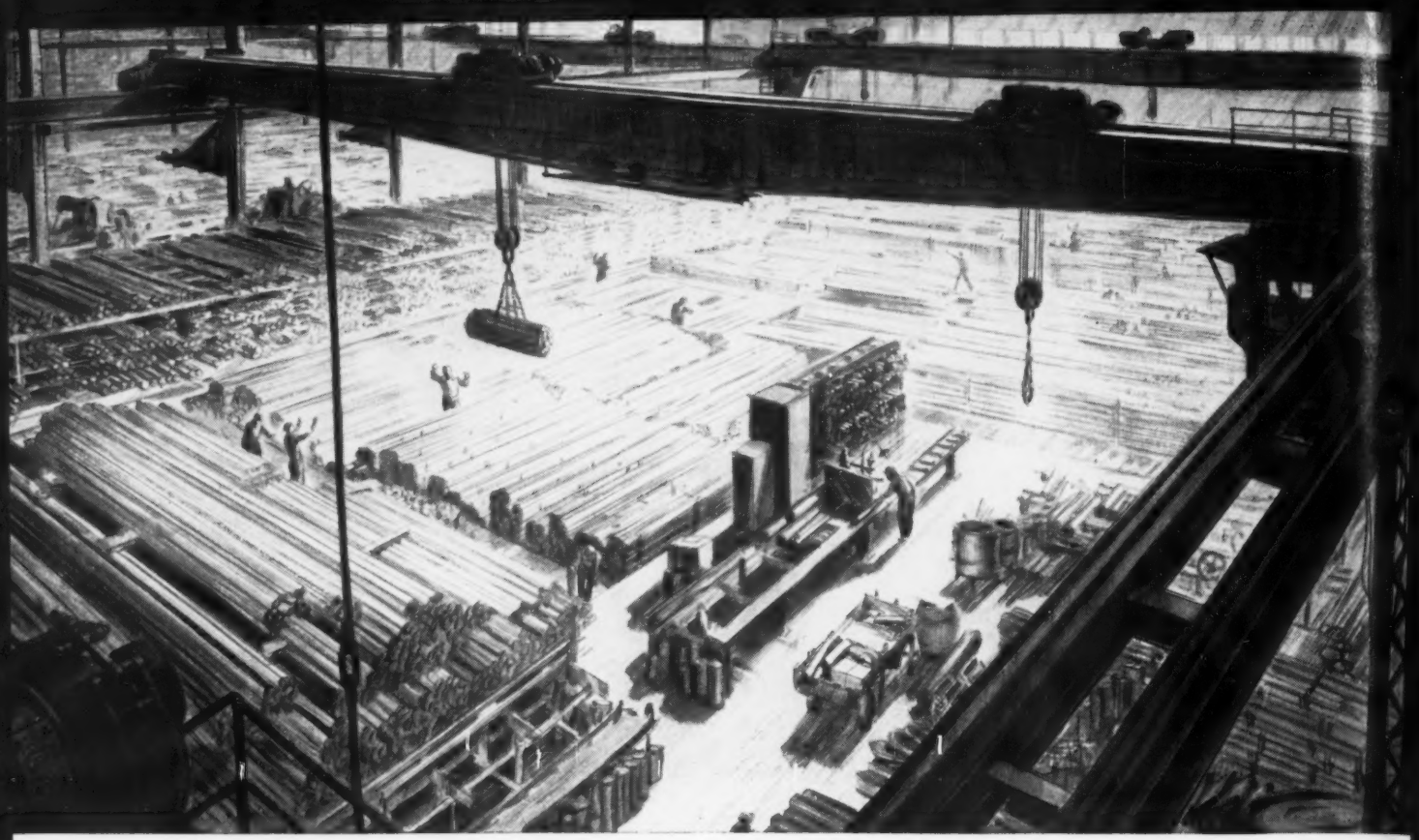
OCTOBER 1943



Fabrics for

PARACHUTES

SEE PAGE 65



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for Immediate Shipment

Your nearby Ryerson Steel-Service plant carries every kind of steel in stock . . . bars, plates, shapes, sheets, hot rolled, cold finished, carbon, alloy and stainless, etc.

Our engineers and metallurgists will be glad to work with you on any problem of steel supply, application or fabrication. Call Ryerson first . . . whether for day to day requirements or an emergency rush order.

In case you have not yet received one, we will be glad to send you the current Ryerson Stock List. Other Ryerson service literature is also available on request.

JOSEPH T. RYERSON & SON, INC.
Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City

RYERSON STEEL-SERVICE

Hunting Timber for Bobbin Stock

Through 2 Years of Defense and War Programs our Loom Repair Service has been Kept at Peacetime Level

Our Record on Bobbin Shipments is Not So Good

Our Handicap has been a Shortage of Suitable Bobbin Stock

The Problem

This shortage is a real problem. Accessible stands of hard wood in New England largely have been cut off. What remains can be brought out only at higher cost, and a shortage of loggers makes this an uncertain job.

Our Solution

We are doing everything possible to get new supplies of suitable timber and produce enough blanks to keep our Beebe River bobbin plant working on its schedule of 3 shifts. Our scouts roam remote forest lands of northern Maine and Vermont. Recently we have bought 40,000 acres of woodland in these two states and have set up bobbin roughing plants at Guilford, Me., and Woodford, Vt. Both are now in production and the situation should gradually improve.

New Draper Timber Land on Vermont's Green Mountains

You can help by anticipating your needs and placing orders well in advance of the time the bobbins will be required.

DRAPER CORPORATION

TEXTILE WORLD. Vol. 93, No. 10, October, 1943. Published monthly by McGRAW-HILL PUBLISHING CO., INC., (Bragdon, Lord & Nagle Division). Publication Office, 99-129 North Broadway, Albany, N. Y. RETURN POSTAGE GUARANTEED. Editorial and Executive Offices, 330 West 42nd Street, New York, (18) N. Y. Allow at least ten days for change of address.
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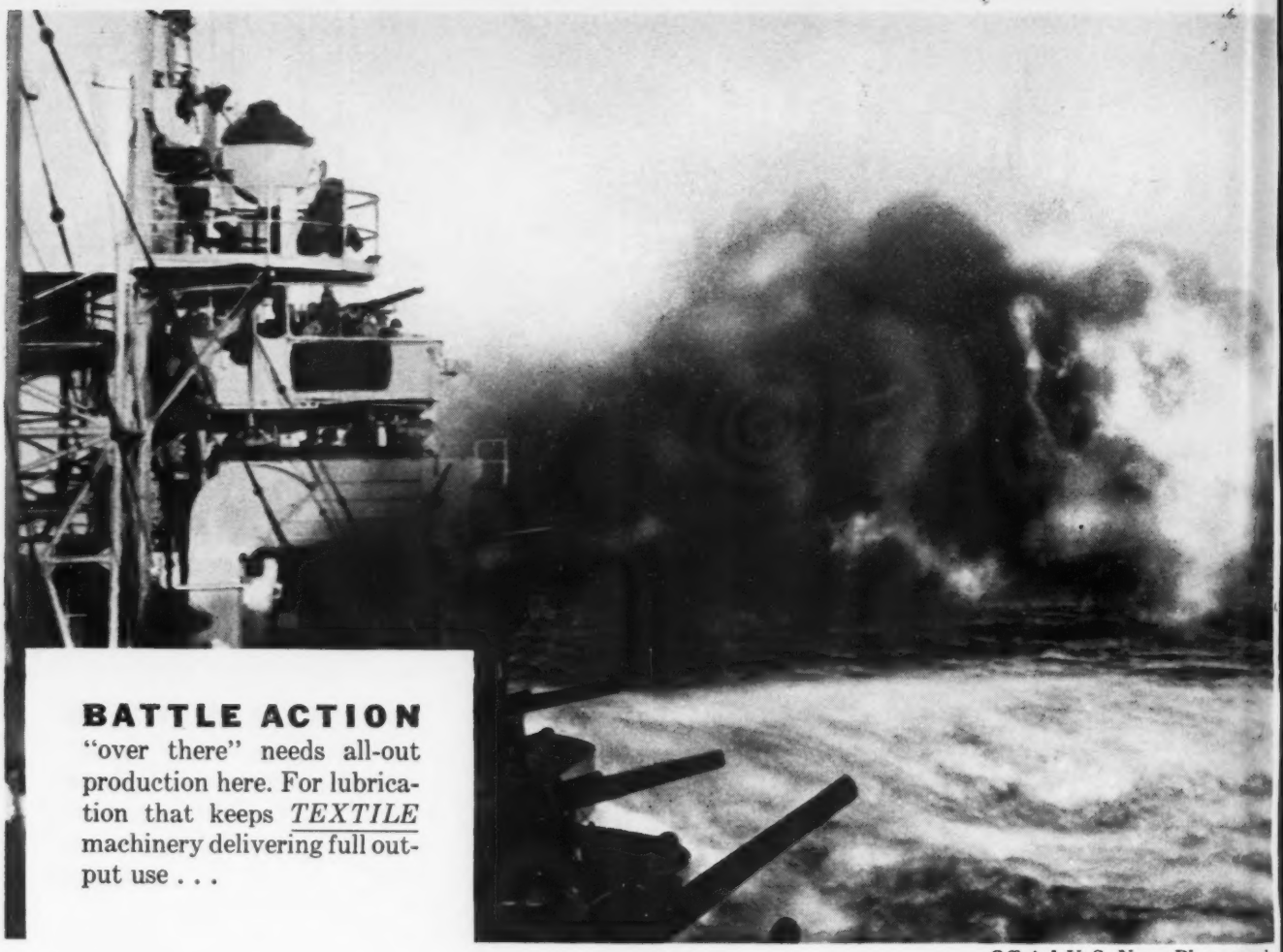
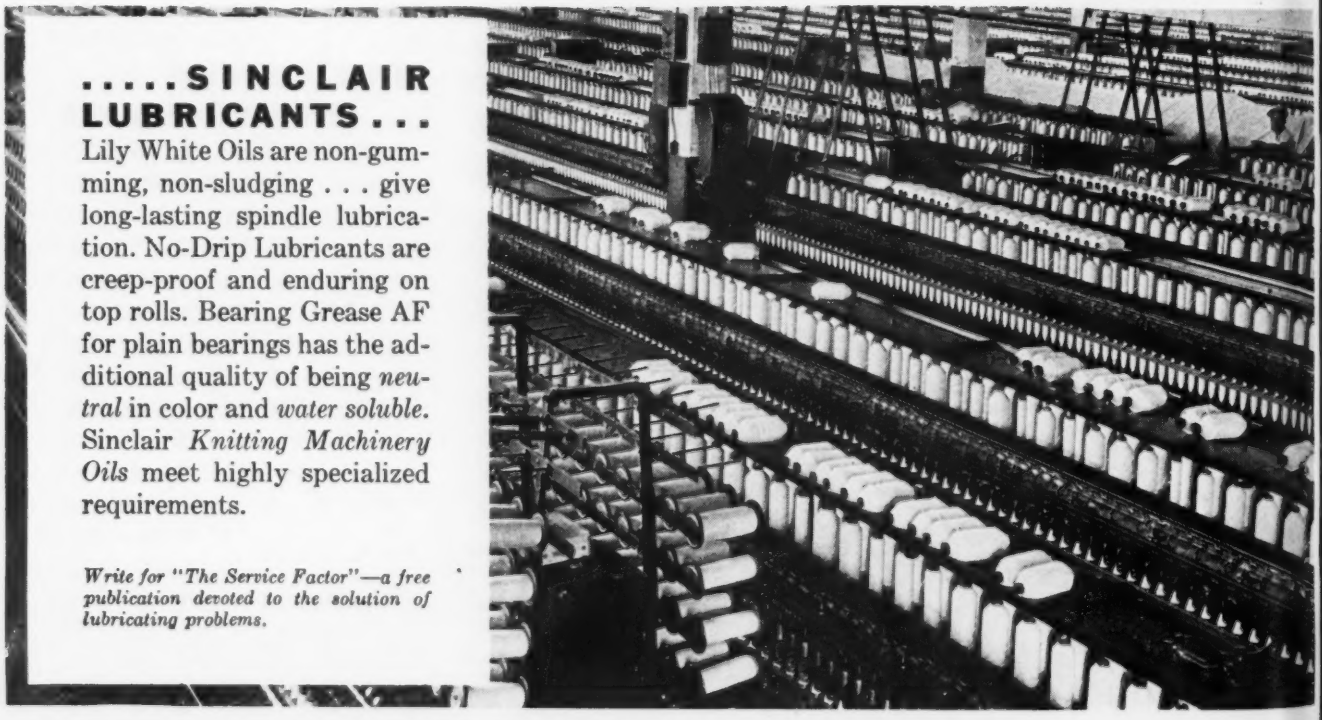


BATTLE ACTION
"over there" needs all-out production here. For lubrication that keeps *TEXTILE* machinery delivering full output use . . .

Official U. S. Navy Photograph



. . . . . SINCLAIR LUBRICANTS . . .
Lily White Oils are non-gumming, non-sludging . . . give long-lasting spindle lubrication. No-Drip Lubricants are creep-proof and enduring on top rolls. Bearing Grease AF for plain bearings has the additional quality of being *neutral* in color and *water soluble.* Sinclair *Knitting Machinery Oils* meet highly specialized requirements.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

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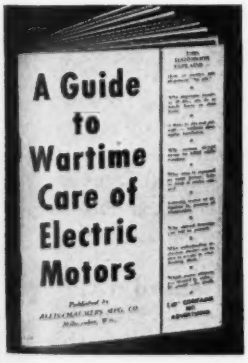
FIRST AID FOR MOTORS

MOTORS RUN A FEVER? No wonder if they do more often today. They're working *3 and 4 times* as many hours as in peace!

Wartime conditions demand you diagnose motor ailments *quickly* ... remedy the trouble at once. At right are but few of the many diagnoses found in Allis-Chalmers' new "Guide to Wartime Care of Electric Motors". In maintenance as in war, *attack is the best defense*. This book singles out the 9 main enemies of electric motors . . . tells you how to get them *before* they get your motors!



Over 100,000 copies already in use.

Write today for your *free* copy. ALLIS-CHALMERS MFG. CO., MILWAUKEE 1, WIS.

SYMPTOMS YOU CAN SEE

Symptom	Possible Causes	Cure
1. Excessive sparking or flashing at brushes. Blackened commutator.	Rough commutator.	Sand or turn down, depending upon depth of surface roughness.
	Low bar on commutator.	Grind or turn down balance of commutator.
	High bar on commutator.	If extreme, lower with mallet, tightening clamping ring. Grind true.
	Brushes too short.	Replace with harder grade—*if worn too soon . . . and not by rough commutator.*
	Shorted armature winding.	Test for short—after removing metallic contact between commutator bars. Repair.
2. Intermittent sparking at brushes.	Open armature winding.	Locate and replace bad coil—or repair defective joint.
3. Motor won't start.	Usually line trouble.	Correct. Check source of power supply.
	Load too heavy. See if motor runs without load.	Reduce load—or replace motor with unit of greater capacity.

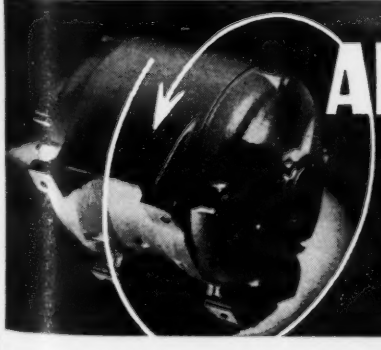
SYMPTOMS YOU CAN HEAR

4. Excessive hum.	Uneven air gap. Measure with feelers.	Replace bearings—before introduction of scraping noise indicates rotor is rubbing.
	Unbalanced rotor. Check on parallel bars.	Balance with solder on band—or weight attached by cap screw and lock washer.
5. Regular clicking.	Matter in air gap.	Take out rotor; remove matter.
6. Rapid knocking	Misalignment.	Realign set until knocking disappears.
7. Brush "chatter."	Extreme vibration.	See item 10, below.

SYMPTOMS YOU CAN FEEL

8. Vibration.	Misalignment.	Realign set.
	Vibration in driven machine.	Eliminate source in machine, if possible. Or a flexible belt drive may be in order.
9. Motor overheating. (Check with thermometer—don't depend on hand).	Overload. Measure load; compare with nameplate rating.	Check for excessive friction in motor, drive or machine. Reduce load, or replace motor with greater capacity unit.
	Dirt in motor. Check flow of air.	Blow out motor. Use solvent on wound section if necessary.
	Rotor rubs stator.	Replace bearings.

A 1638



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When you do need new motors, look into the strength, solidity and all-around protection of the new "Safety Circle"—protected top, sides, ends and bottom.

AC — WE WORK FOR VICTORY — WE PLAN FOR PEACE

Surrender of the Fleet

Comments by Henry G. Lord

When I read, a few days ago, about the surrender of the Italian Fleet and the long line of warships steaming into the harbors of Valetta and Malta, under the escort of British warships, I was reminded how "history repeats itself."

I had the unusual experience of witnessing a similar spectacle twenty-five years ago, when the German Fleet, under the terms of the surrender, steamed into the Firth of Forth one dark, misty morning, under escort of the Grand Fleet.

On the previous day a little group of American editors and publishers, of which I was one, had been invited to visit the Grand Fleet. Although the armistice had been declared, nothing had appeared in the newspapers as to the whereabouts of the Grand Fleet.

We took the night train from London to Edinburgh and in the morning, soon after our arrival, we motored to Rossyth, where a large navy launch was waiting for us. There, in the Firth of Forth, was the Grand Fleet stretching for miles above and below the great bridge. At anchorage, near the shore, were dozens of destroyers and near the docks scores of submarines tied up side by side.

The launch took us up the Firth and we boarded different types of warships—heavy cruisers, light cruisers and destroyers—returning to the flagship, the "Queen Elizabeth," for luncheon as the guests of Admiral Beatty, together with members of his staff and a number of captains of the British battleships.

The conversation was all about the surrender of the German Fleet which was to take place the next day; in fact, the German Fleet was on the way at that very time. I sat beside the captain of the British warship "Lion" and pleaded with him for permission to be on board of one of the British ships which was going out to meet the German Fleet as it neared the coast of Scotland. We were told that that would be impossible as no one could tell what might happen. Some of the British officers expected, and I think most of them rather hoped, that the Germans might put up a spectacular fight, preferring to be sunk under fire. It will be remembered that they did sink their own ships when they were afterwards moved up to Scapa Flow.

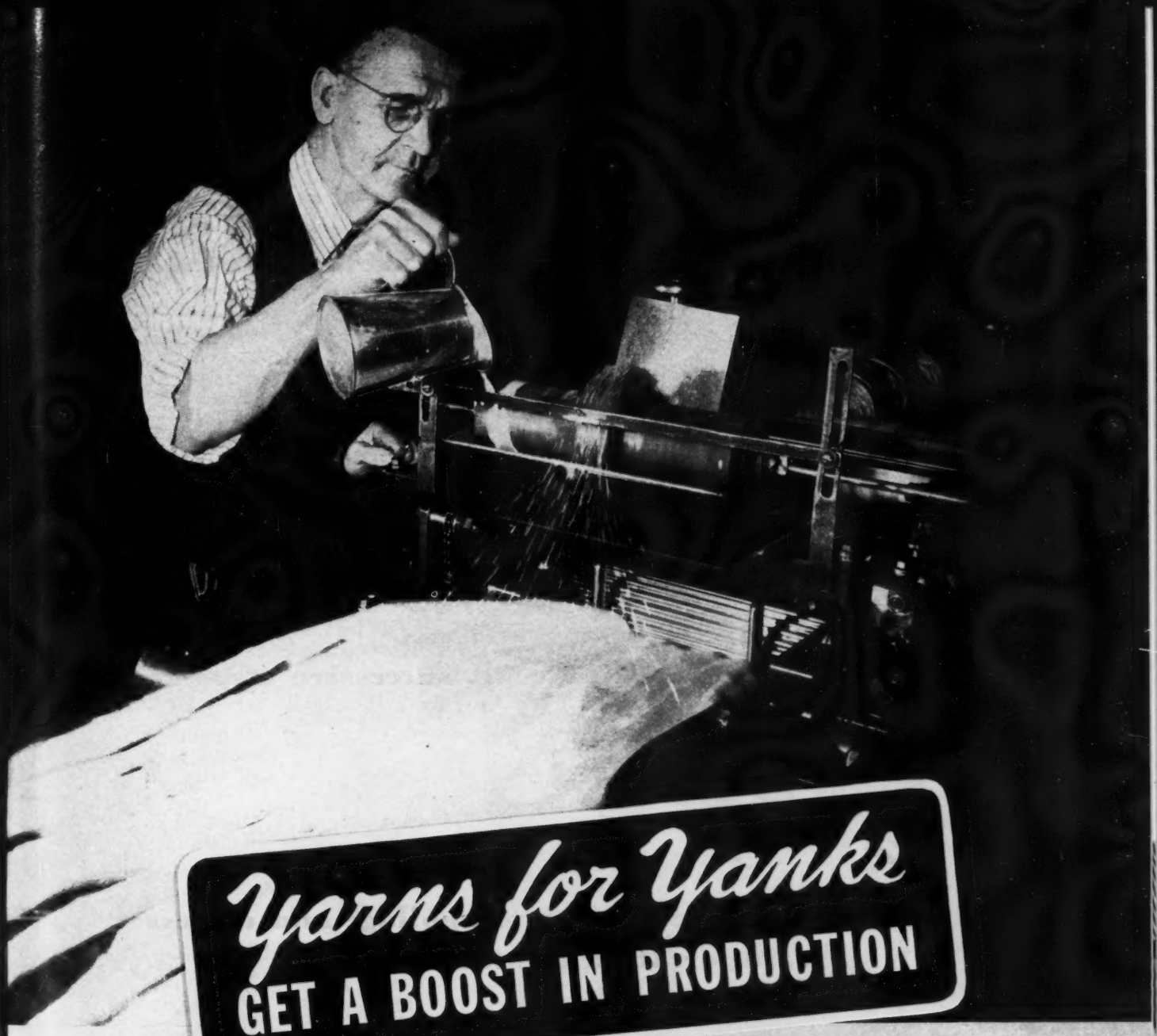
I told the captain of the "Lion" of our experiences in visiting the various ships in the morning and that we were looking forward to visiting the American battleship squadron in the afternoon, which he said was lying down below the bridge. "But," he explained, "*We* don't call it and *they* don't call it the *American* Squadron. It is Squadron No. 6. This is all one Grand Allied Fleet." As we went down the bay, after luncheon, I realized how true that was. The great battle squadron of a dozen or more grand battleships stretched for several miles, with one line of British warships paired off with another line flying the Stars and Stripes. It was a tremendously impressive spectacle of great united power.

Although we could not see the surrender from one of the Allied warships going out to meet the Germans, we were determined to see this historic sight, so next morning we again drove out from Edinburgh to the heights overlooking the Firth of Forth and waited hours for the German Fleet, with its British escorting squadrons, to come in. It was a misty morning and the distance was too great to afford a very clear picture of the scene, but the story in the newspapers confirmed my impression that the German vessels were in the centre of a huge square composed of British warships on each side and in front and behind. Then the fog closed down and the picture was blotted out.

That tragic spectacle marked the end of Germany's struggle for domination of the sea.

And now the collapse of the great Italian Fleet ends another chapter of naval history. It gives us comfortable assurance that no power or combination of powers can wrest from the combined British and American Fleets the ultimate security of the seas, which with our growing air supremacy, can and should insure the peace of the world if we are able to construct the right pattern for it when this war is over.

HENRY G. LORD, ***Vice-President of McGraw-Hill Publishing Co. and Founder of Textile World***



Yarns for Yanks GET A BOOST IN PRODUCTION

SUNOTEX OILS

...provide better "wet through", spinning and scouring!

"G. I." Blankets . . . uniforms . . . and socks are but a few of the items our armed forces need today by the millions. That's the reason America's textile mills have been called upon to process woolen yarns faster and better than ever before.

A large New England textile mill found the answer to the demand for increased production when they called in a Sun Textile man. They had been using one of the highest priced processing oils to get speed and quality, but were falling short of their production goal. The emulsion did not carry through with the result that the stock "heated" in the bins before reaching the combing operations.

Then the Sun Doctor of Industry recommended a change to Sunotex RS 420. Trouble stopped! They found it easier to mix the emulsion . . . greater strength was imparted to the finished yarn . . . and they obtained better scouring . . . thus improving their dyeing.

Whether you are processing "yarns for Yanks" or rayon and Nylon for parachutes there's a Sunotex Oil to help you speed your processing and improve the quality of the finished product. Let a Sun Doctor of Industry come into your plant and help solve your problems. His services are yours to use to improve your production. Write . . .

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Sun Oil Company, Limited, Toronto, Canada

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SUN INDUSTRIAL PRODUCTS HELPING INDUSTRY HELP AMERICA

Saco-Lowell-ize

1 . . . to utilize floor space so as to achieve the ideal in continuity of production.

2 . . . to coordinate all successive steps in processing.

3 . . . to reduce waste, spoilage and useless transportation of stock.

4 . . . to attain the greatest economy in maintenance and operating costs.

SACO-LOWELL SHOPS

60 Batterymarch St., Boston, Mass. - Charlotte - Greenville - Atlanta

A reminder — to users of rubber products

In buying industrial rubber goods today the skill and integrity of the manufacturer are more important than ever before.

In building to war grade specifications — either from natural or synthetic rubber — the only ingredient that is not now rationed is "know-how"!

Goodyear's war grade products are constructed with the same capability that made their peacetime predecessors first choice in industry for standout performance.

In materials, they are built from the highest-grade stocks now obtainable under WPB regulations.

Those made from synthetic rubbers embody Goodyear's two decades of experience in pioneering and perfecting synthetics impermeable to oil and gasoline.

All industrial rubber products are correctly specified to the job by the G.T.M.—Goodyear Technical Man—whose practical knowledge, as you know from experience, assures proper application and trouble-free performance.

Don't take chances, get the best in rubber — *Goodyear rubber*. To bring the G.T.M. to your office, write Goodyear, Akron 16, Ohio or Los Angeles 54, California — or phone the nearest Goodyear Industrial Rubber Goods Distributor.

FREE—TO MAKE YOUR RUBBER LAST LONGER

Send for manual "GOODYEAR INDUSTRIAL RUBBER PRODUCTS CONSERVATION" — filled with complete instructions for care and repair of hose, belts, etc. Thousands in use.

GOODYEAR

THE GREATEST NAME IN RUBBER

ABBOTT MACHINE COMPANY

WILTON, N. H.

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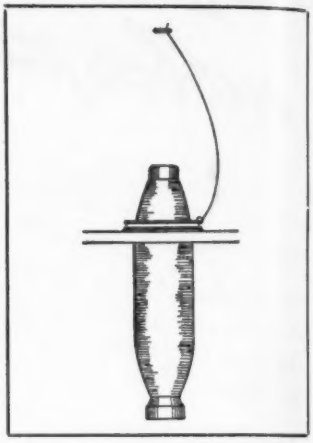
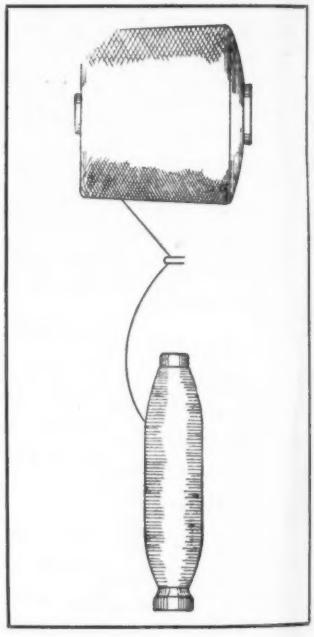


SPIN ALL YARNS ON TO LARGE WARP BOBBINS UP TO 8 OZ. DEPENDING ON COUNT

SAVE DOFFING AND INCREASE SPINDLE EFFICIENCY

WIND AND SLUB TO LARGE 4° CONES AT 600 TO 750 YARDS PER MINUTE



900 TO 1000 NET BOBBINS PER HOUR PER OPERATOR

USING:-

ABBOTT TRAVELING SPINDLE
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FROM THESE CONES:-

WARP AT HIGH SPEED
FROM A MAGAZINE
CONE CREEL

OR

WIND LOOM QUILLS

USING:-

ABBOTT
AUTOMATIC
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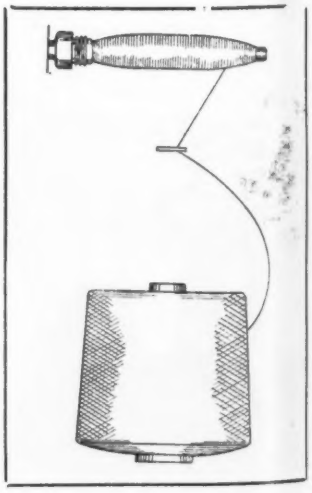
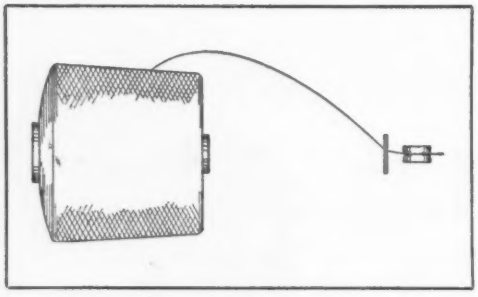


1000 TO 2000
BOBBINS PER
HOUR PER
OPERATOR



burned out motor

back on the job in 22 hours

BURNED-OUT MOTOR OF SPECIAL DESIGN RECEIVED 5:00 P. M. AT WESTINGHOUSE DISTRICT MANUFACTURING AND REPAIR PLANT REPLACEMENT IMPOSSIBLE TO OBTAIN. MOTOR STRIPPED, REWOUND. STATOR DIPPED, BAKED, ASSEMBLED AND TESTED DELIVERED TO USER FOLLOWING DAY, 3·00 P. M — 22 HOURS AFTER BREAKDOWN.

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EMERGENCY SERVICE

33 M & R PLANTS . . . ONE NEAR YOU!

OUR STORY IN PICTURES LEAVES NOTHING UNTOLD

★ Within fifty-six pages, profusely illustrated is as much of the story of the adaptability, economy and efficiency of overhead handling with AMERICAN MONORAIL EQUIPMENT that can be told without personal consultation.

If you are interested in producing more war material and at the same time preparing for post-war activities, do two things. First, send for American Mono-Rail Picture Book, see how this equipment is efficiently serving hundreds of handling jobs. Second, send for the American MonoRail Engineer to show you additional advantages to your individual problem. Write for your copy today!

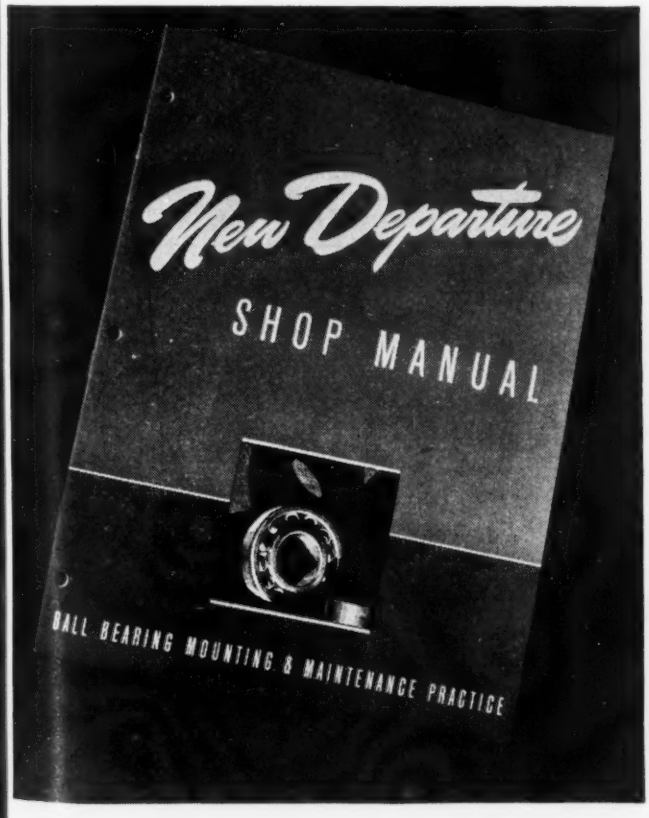
THE AMERICAN MONORAIL CO. 13108 ATHENS AVENUE CLEVELAND 7, OHIO

TEXTILE MACHINERY FEELS HEAVY STRAIN

Many of the machines have been operated 80 hours a week, or twice the normal operating time, for the last three years.

* * *

What more need we say . . . what more can we say . . . to persuade you to write for your copy of this practical, timely, helpful book!



This latest addition to the well-known New Departure Engineering Library is New Departure technical staff's most recent production to aid "regular customers." It should be read by every textile man responsible for the correct installation of ball bearings for maximum service and long life. If your copy is mislaid or dog-eared from overwork, we'll be glad to send a new one. Also . . . we'll send enough additional copies to supply your interested personnel. Send your request to New Departure Division General Motors Corporation, Bristol, Connecticut.

New Departure

THE FORGED STEEL BEARING

3196

has a major responsibility in the whole ball bearing war production program

☆ ☆ ☆ Back the attack with War Bonds ☆ ☆ ☆

RAYON REPORTS

Presented Monthly by American Viscose Corporation, New York, N. Y. OCTOBER, 1943

NEW AMERICAN VISCOSE LACING METHOD KEEPS SKEINS RIGHT SIDE OUT, IMPROVES WINDABILITY

The windability of a skein that has been dried wrong side out after dyeing or treating for twisting, is appreciably poorer than that of a skein which has been correctly handled. Large scale tests have shown that winding-room efficiency can be considerably increased if, when "dressing" skeins prior to drying, care is taken that they are all placed on the dryer rods right side out.

A method has been adopted whereby, in the future, all our skeined yarns will be laced with a "key" tieband which will have a constant relationship, insofar as its position in the skein goes, to the "significant" tieband used to identify the yarn, denier size and filament count. Thus, when facing the skein and with all tieband knots to the left, if the "key" tieband is above the "significant" tieband, then the skein will be right side out.

ANOTHER "CROWN" DEVELOPMENT
IMPROVE WINDING QUALITY
KEEP SKEINS RIGHT SIDE OUT
A
B
Skeins are RIGHT SIDE OUT provided Lacing "A" is ABOVE Lacing "B" and all Lacing KNOTS are ON the LEFT as you face the Skein.
American Viscose Corporation

For the guidance and education of mill employees, American Viscose Corporation will place a sketch, similar to the one pictured here, in every case of skeined yarn shipped.

NEW RAYON BOOKLET IN DEMAND

Because it clearly emphasizes and illustrates the importance of rayon to the war effort, the new booklet, "Rayon Goes to War" is in great demand in the trade.

Recently issued by the American Viscose Corporation, this booklet describes the part that unending research has played in developing rayon yarns suitable for military uses.

To get your copy of "Rayon Goes to War" simply address your request to American Viscose Corporation, 350 Fifth Ave., New York 1, New York.

PLANT CONVERSION LOOKED UPON AS IMPORTANT POSTWAR STEP

The recent conversion of the rayon staple manufacturing facilities of American Viscose Corporation's Front Royal Plant to the production of "Avisco" is regarded as an important trend in the development of new fabrics in the postwar period.

This stronger viscose rayon staple has already become popular with outerwear manufacturers and with weaving technicians who are developing many new fabrics which are expected to run into considerable volume after the war.

Notable among these is rayon broadcloth which holds a strong place. Fine yarns spun from high tenacity rayon staple fiber can be used effectively in cloths of this type, thus giving these fabrics a greatly improved sales position in such primarily "washable" markets as men's shirtings, children's wear and intimate apparel.

Coincident with the increasing production of "Avisco" has been its reduced price. The price has already been reduced from 26 to 25 cents a pound.

AMERICAN VISCOSE PLANS TO EXPAND RESEARCH

American Viscose Corporation is consolidating all its basic research activities at Marcus Hook, Pa.

Heretofore, the company's research work on viscose and acetate rayon has been carried on at Marcus Hook and Meadville, Pa. Under the new arrangement, research on these two products, together with all other basic research, will be done at Marcus Hook. The men who direct the corporation's basic research activities will be grouped together at this plant... resulting in greater efficiency and better all-around results.

Also, research facilities are to be considerably expanded, not only for increased work on the chemical aspects of rayon production, but also for more intensive experimental work and added pilot plant operations. This great expansion will mean greater benefits to the trade.

U. S. FIBER PRICES

According to a study conducted by the Department of Agriculture, the yearly average prices of the main textile fibers maintained in this country are as follows:

	1940	1941	1942	Jan. 1943
	(in cents per pound)			
WOOL (scoured) territory, fine	96.3	108.8	119.1	119.0
COTTON (15/16)	10.17	13.92	19.3	20.4
RAYON YARN (150 denier)	53.0	53.6	55.0	55.0
RAYON STAPLE FIBER				
Viscose 1½ denier	25.0	25.0	25.0	25.0
Acetate 5 denier	43.0	43.0	43.0	43.0

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN"* TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION
Producer of
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Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.
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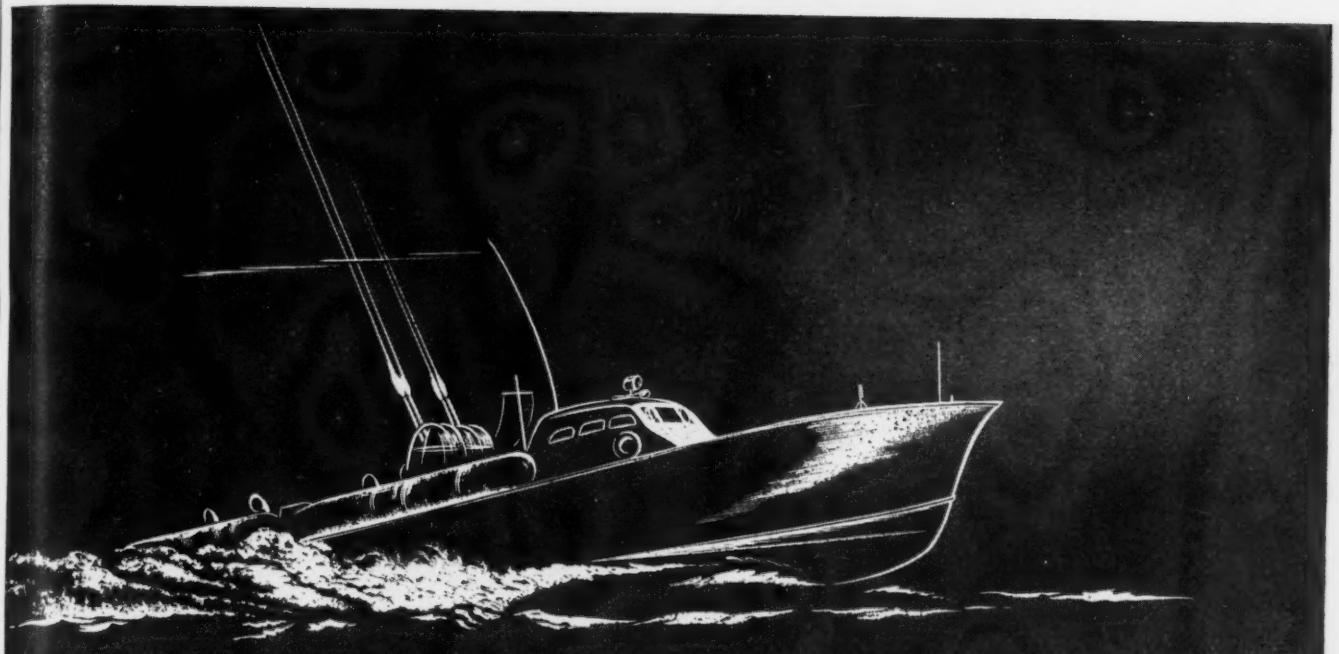
CROWN TESTED RAYON FABRIC

*Reg. U. S. Pat. Off. Copr. 1943, American Viscose Corp.



For Speed

IN WETTING OUT...

SURFAX W.O.

In tune with the times, Houghton's Surfax W. O. gives you *faster* wetting out for all types of textile processing. It's concentrated . . . you use less, yet get speedier wetting out and superior wetting-back properties, so important in sanforizing. Surfax W. O. has great efficiency at high or low temperatures. Use it as a softener, as a dye-bath leveler, as a penetrant, as an aid to the sanforizing process. The Houghton Man has the facts . . . ask him, or write—

E. F. HOUGHTON & CO.

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"SIS- run downstairs and open the door for Aunt Emma"

SHE SIMPLY LOOKS AT THE TELEVISION SCREEN AND SEES WHO'S AT THE DOOR

Just imagine, dressing in the privacy of your own room and *seeing* who's at the door! It's the world of tomorrow—and a not too far distant tomorrow at that. The applications of the amazing new science of electronics have already proven themselves in war time. Their conversion to peacetime living is just around the corner.

Or take another example. The "Continuous Process" for making rayon yarn is as much a miracle in textiles as television screens are to electronics. Just imagine a method of rayon manufacture that proceeds from spinning the filament to twisting the yarn, all in one continuous operation.

And the parallel still holds—for "Continuous Process" rayon yarn is also busy now doing work for war—providing uniform, knot-free yarn for parachutes, tire cord for bombers and heavy-duty tires, wrapping for electrical wiring, and the like. Once the war ends, watch the "Continuous Process" convert to peace, and watch the new textiles, the new fabrics, the new standards of quality that "Continuous Process" yarn will make possible for the world of the future.

Industrial RAYON CORPORATION
MAKERS OF "CONTINUOUS PROCESS" RAYON YARN AND Spun-lo KNIT UNDERWEAR CLOTH

*Reg. U. S. Pat. Off.

CLEVELAND, OHIO · *New York Office, 500 Fifth Avenue*

A HOUSE PAINTER...

and Grandpa's portrait

A painter can work wonders on your house ... but your Grandpappy's portrait ... oh, no! It takes a specialist. The same holds true of belting.

Gilmer *specializes* in belts! Gilmer Kable Kord Lickerin Belts increase production and outlast any belt on the market. Gilmer V-Belts deliver power with maximum efficiency from motors to spinning frames. Gilmer Cone-Drive Belts give longer life in the toughest service and shift easily because of sturdy internal construction. Gilmer has a complete line ... engineered by specialists ... the right belt for the right job.

The Gilmer Engineering Staff specializes in power transmission problems. A welcome is extended to Textile Plant men for consultation without obligation. Get "Gilmer Belts for the Textile Industry" ... just clip the attached coupon. This handbook simplifies the details for specifying Belts for the great majority of Drives. It's yours for the asking.

L. H. GILMER COMPANY
TACONY, PHILADELPHIA 35, PA.
The Oldest Firm of Rubber Fabric Belt Specialists

FOR THE RIGHT JOB

GILMER KABLE KORD LICKERIN BELTS

GILMER V-BELTS FOR SPINNING FRAME DRIVES

GILMER CONE-DRIVE BELTS

GILMER ENDLESS ROUND BELTS FOR CARDING MACHINES

GILMER ENDLESS CORD SPINNER BELTS FOR SILK THROWING

and many others, all covered in "Gilmer Belts for the Textile Industry." Get your copy today ... just clip the coupon.

Gilmer BELTS

L. H. GILMER COMPANY
Tacony, Philadelphia 35, Pa.

Kindly send me my copy of the "Gilmer Belts for the Textile Industry," free of charge.

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L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
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Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

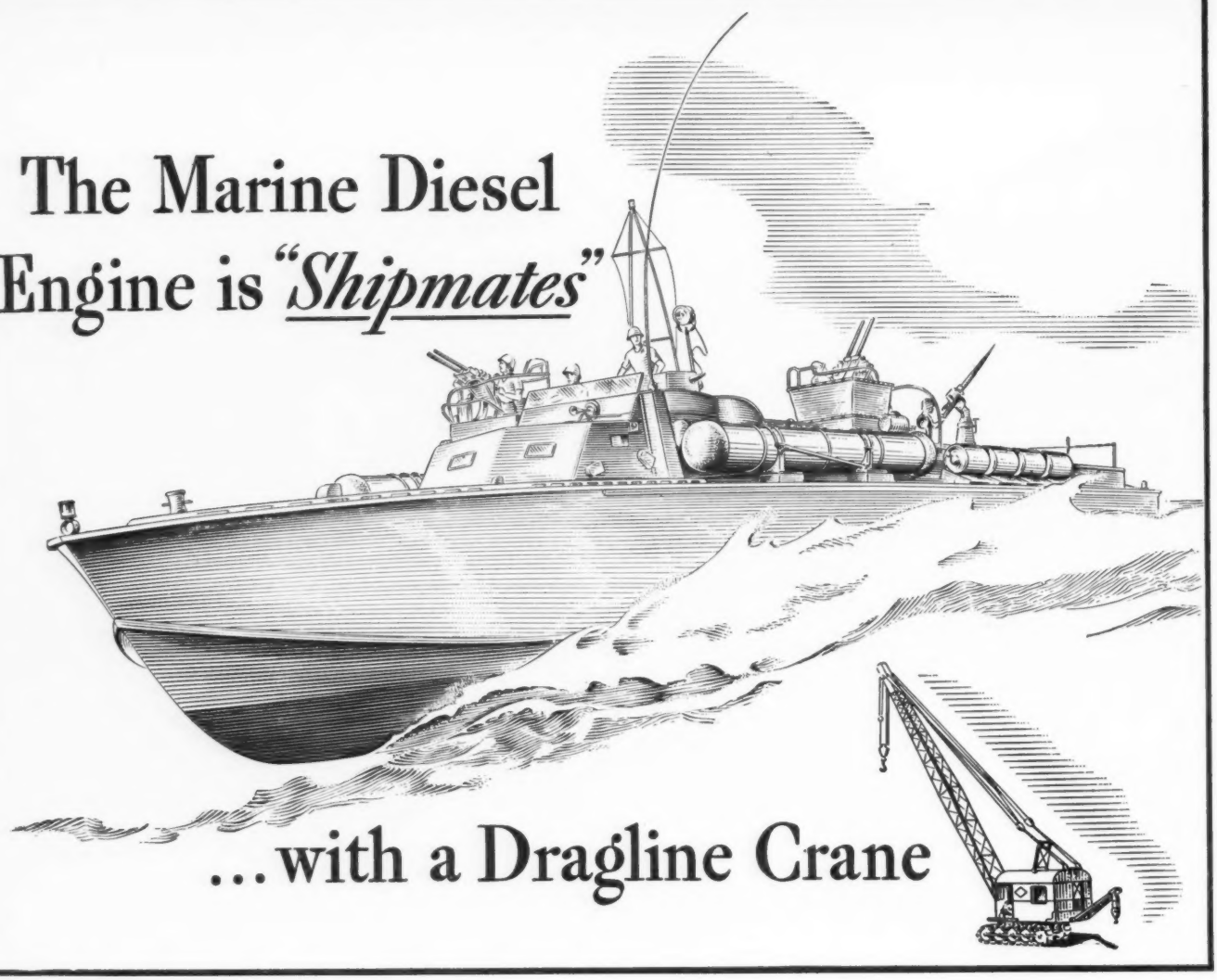
Inquiries as to our services solicited

●

ESTABLISHED 1840

Re-needling
THAT MAKES EVERY NEEDLE COUNT MORE
Every needle in your mill must do a full-time job today . . . to speed production, avoid delays, as well as reduce yarn spoilage. That's why re-needling is so important.
At Torrington every step is planned and executed to give the greatest accuracy and assure the most dependable needle performance. The men who do the work at Torrington's Philadelphia branch and Canadian plant are specialists—craftsmen of lifelong experience in this one job. They will do your re-needling with the care and precision that make every needle do more efficient work . . . last longer . . . and contribute to better knitting. Torrington re-needling service is fast and economical, also. Bars received one day can often be completeiy reconditioned and sent back to you the next. Call in Torrington on your next re-needling problem.
THE TORRINGTON COMPANY
1640 Fairmount Avenue, Philadelphia, Pa.
THE TORRINGTON COMPANY, LTD.
Bedford, Quebec, Canada
Torrington
SPRING BEARD NEEDLES • SINKERS
DIVIDERS • SPLIT DIVIDERS

The Marine Diesel Engine is *"Shipmates"*



...with a Dragline Crane

YOU MIGHT WONDER at the connection between a Marine Diesel engine and a dragline crane. The crane's is a back-breaking job in all kinds of weather, and maintenance must be taken with a grain of salt. Knowing this, crane companies wisely choose the Torrington Needle Bearing, famed for high load capacity, efficient lubrication and minimum service attention required.

Now the Marine Diesel engine is something else again—a miracle of compact engineering design that's got to be so thoroughly dependable...so all-fired ready at the bark of a command that selection of even small parts becomes a major consideration. So the Marine Diesel designers, too, specified the Needle Bearing—for its small size and reliable performance. But they discovered some other features that were right "on target," although hardly expected in a bearing.

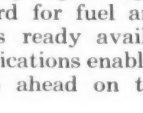
The low starting friction of this unique anti-friction bearing, for example, meant quicker engine response, and maybe sub and PT-boat crews don't appreciate that. High load capacity helped prevent overloading, keeping more ships in fighting trim more of the time. The Needle Bearing's light weight saved pounds on board for fuel and ammunition, while its ready availability for essential applications enabled engine builders to go ahead on the Marine Diesel production that helped turn the tide in the battle of the Atlantic.

NEEDLE BEARINGS— ALL TYPES—ALL SIZES

NEEDLE BEARINGS TYPE DC are complete, self-contained units consisting of a full complement of rollers and a drawn, hardened outer race. They offer the advantages of small size, low cost, high capacity—and easy installation.

NEEDLE BEARINGS TYPE NCS consist of a full complement of rollers and a relatively heavy hardened outer race. They are furnished with or without inner races. Needle Bearings Type NCS are adaptable to heavier loads than Needle Bearings Type DC.

NEEDLE ROLLERS TYPE LN are produced in a range of types and sizes for assembly on the job into low-cost, high-capacity, anti-friction bearing units. Our engineering department will be glad to advise on the correct size and type for any application.



HAS THIS GIVEN YOU AN IDEA for your post-war designs? You may find the answer to one of your problems in the Needle Bearing's unique combination of features. For these are what your customers have been educated by war's developments to want in the peacetime products they plan to buy. Light weight, compact design, ease of installation, infrequent maintenance, long life—here are Tomorrow's sales points, and they add up to the Needle Bearing. Let a Torrington engineer show you how *you* can adapt the Needle Bearing's advantages to your product's design. For preliminary information, send for Catalog No. 116 which lists sizes, types and ratings, together with a list of typical applications.

THE TORRINGTON COMPANY

Established 1866 • Torrington, Conn. • South Bend 21, Ind

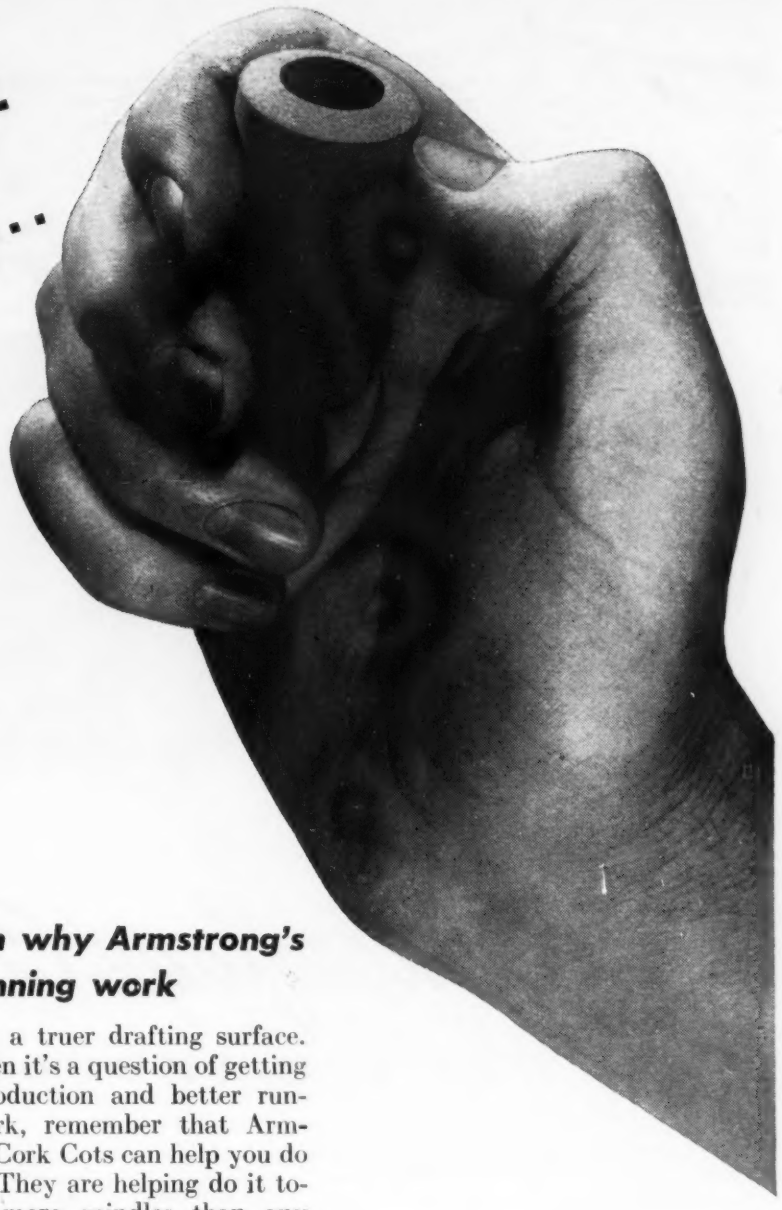
Makers of Needle Bearings and Needle Bearing Rollers

New York · Boston · Philadelphia
Detroit · Cleveland · Seattle
San Francisco · Chicago · Los Angeles
Toronto · London, England

LET'S GO! U.S.A. KEEP 'EM FLYING!

TORRINGTON NEEDLE BEARINGS

PRESS YOUR THUMBNAIL INTO A PIECE OF CORK...



... and discover one more reason why Armstrong's Cork Cots mean better running work

PUSH your thumbnail into the surface of a cork cot, then remove it. Notice how the cork springs back instantly.

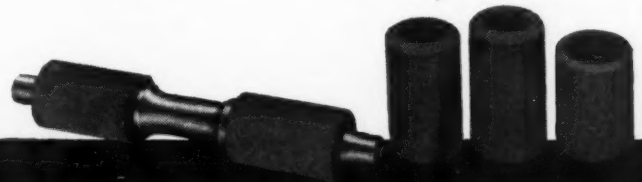
That's *resilience.* No other roll covering has as much. Yes, it is cork's *resilience* that resists grooving and "hollowing out," *resilience* that means quick come-back after shutdowns.

And that's only one of the characteristics of Armstrong's Cork Cots that today are giving more production on millions of spindles. Cork has a high coefficient of friction, and that means positive drafting, no eyebrowing, minimum slippage. Cork has positive resistance to lateral flow, which helps maintain a truer drafting surface.

So when it's a question of getting more production and better running work, remember that Armstrong's Cork Cots can help you do the job. They are helping do it today on more spindles than any other type of roll covering.

Remember, too, that Armstrong's Cork Cots are low in first cost, and that you can rebuff them three or four times for as little as one-half cent per rebuffing. And cork is plentiful. You can get Armstrong's Cork Cots without any priority rating.

For the complete facts, write Armstrong Cork Co., Textile Products Section, 8310 Arch Street, Lancaster, Pa.



ARMSTRONG'S CORK COTS

ACCOTEX COTS · ACCOTEX APRONS

ARMSTRONG IS HEADQUARTERS FOR

ROLL COVERINGS
Cork Cots · Accolex Cots (synthetic rubber) · Cork Covers · Loom Take-Up Roll Coverings

ROLL SHOP EQUIPMENT AND SUPPLIES

ACCOTEX LONG DRAFT APRONS

TEMPLE ROLLS · CORK CONES

LOOM CLUTCH FACINGS

WINDER SPINDLE HEAD COVERS
. . . and other textile mill supplies

Pioneering WITH Pigments
–one of a series of developments illustrating the advantages of Aridye* pigmented colors in new and significant applications

Camouflage Colors—AN ILLUSTRATION OF WHY YOU SHOULD USE PIGMENTS

There are many textile printing and dyeing problems to which pigments offer the best solution. Camouflage strips are an excellent wartime example; here, burlap and osnaburg must be finished and dyed to meet government specifications covering penetration, weather-fastness, mildew resistance, gloss, imprint, solubility, spontaneous combustion and infra-red reflectance.

Were it not for the infra-red reflectance, weather-fastness, and the handling difficulties of burlap, these specifications would present no unusual problems. But conventional dyestuffs have low reflectance of infra-red rays, and their presence would be detected by the enemy through the use of infra-red photography. Camouflage strips pigment-dyed with selected pigments, however, elude detection under infra-red photography as well as when they are viewed by the naked eye; and the weather-fastness of these pigments is such that, even on burlap, they meet the most stringent weather-fastness requirements.

Camouflage strips, therefore, exemplify an application which clearly calls for pigments–and finishers have chosen Aridye camouflage colors, developed expressly for this purpose, for more than 50 million yards of this fabric!

Especially when extreme lightfastness or washfastness or ease of application are desired, there are many other instances where superior results can be obtained on cotton, rayon, acetate and mixtures of these fibers through the use of pigments. The question, in deciding between conventional dyestuffs and pigments, is which method gives the most satisfactory results or is more efficient for a particular purpose or is the less expensive. Frequently, pigments will be the answer; and a considerable increase in the use of pigments for plain shade dyeing can be expected after the war.

When you are faced with a printing or dyeing problem, consider pigments as a possible solution; and for complete information about pigment colors, or for technical assistance in their application, consult the leaders in pigment experience and research—write to Aridye Corporation, a subsidiary of Interchemical Corporation, Fair Lawn, New Jersey.

An illustrated, detailed folder has been prepared on the dyeing of camouflage strips with Aridye pigment colors, and will be sent without obligation to all finishing plants requesting it. Send for your copy today.

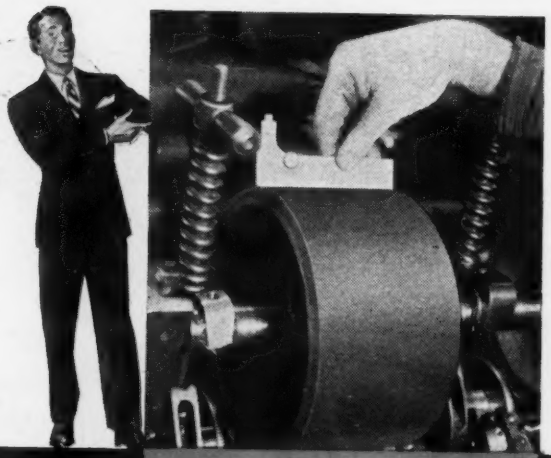
*Reg. U. S. Pat. Off.

Aridye TEXTILE COLORING MATERIALS

ARIDYE CORPORATION • SUBSIDIARY OF INTERCHEMICAL CORPORATION • FAIR LAWN, N. J. • ROCK HILL, S. C. • PROVIDENCE, R. I.

Dayco Worsted Cots

MILL-PROVED UNIFORMITY—



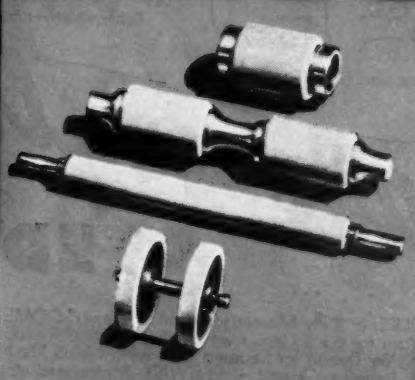
After a year of continuous round-the-clock service, this typical Dayco Worsted Cot is still perfectly true with no bumps, grooves or hollows.

Dayco Worsted Cots keep you on the beam with stepped-up production of *more* uniform yarn. They keep maintenance and replacement costs at an absolute minimum. Why? Because Daycos are mill-proved to stay true and "on the level," on the toughest assignments, while lasting twelve times longer than all others.

A product of years of pioneering synthetic rubber developments, Dayco Worsted Cots assure you these 8 outstanding advantages:

1. Great savings in labor and time applying cots to arbors.
2. Increased cot life—outlast others by 12 times or more.
3. Greatly reduce power consumption on spinning and drawing frames.
4. Reduce matching-up through more uniform yarn production.
5. Reduce replacements of rolls on frames to an absolute minimum.
6. Eliminate wasted time and labor in removing and resetting the pressure on rolls after shutdowns.
7. Run any kind of number and/or mixtures of wool, rayon and mohair with equal efficiency and a minimum of lint.
8. Simplify schedules—and give more and better production of the wanted numbers.

THE DAYTON RUBBER MANUFACTURING CO.
DAYTON, OHIO • WAYNESVILLE, NORTH CAROLINA
Famous Dayco Synthetic Rubber Products since 1934
MAIN SALES OFFICE: Woodside Building • Greenville, S. C.



Dayco
SYNTHETIC RUBBER
Roll Coverings
A THOROBRED* PRODUCT BY
Dayton Rubber
TECHNICAL EXCELLENCE IN SYNTHETIC AND NATURAL RUBBERS

* Reg. Trade Mark, The Dayton Rubber Mfg. Co.

Back the Attack—
Buy More War Bonds

Called to the Colors

To make the insignia proudly worn on the shoulders of our Army men and women, vast quantities of dyed yarns are required. Large amounts are also needed for O.D. socks and undergarments, as well as for many other types of service apparel. Naturally, this doesn't leave much time or material for handling civilian orders—but you can be sure that we're doing our best to make fair distribution of our facilities and production.

Made of Durene multi-ply mercerized cotton
4 WAYS BETTER than ordinary cottons
EXTRA COMFORT — more absorbent
EXTRA STRENGTH — longer wear
EXTRA QUALITY — lasting lustre
EXTRA SERVICE — easy to wash

ABERFOYLE MANUFACTURING COMPANY
123 South Broad Street, Philadelphia 9, Pa.

—and in the South

ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina

Representatives in principal textile centers of the world

ESTABLISHED 1883

aberfoyle

DYED YARNS

DURENE 2-Ply Mercerized Cotton Yarn • COMETCORD 4-Ply Mercerized Cotton Yarn for 6 x 3 Lines • S-P-Y, the Moisture Resistant Mercerized Yarn • NEOPHIL Nylon Thread for Seaming & Looping Nylon Hosiery • PREFERRED BRAND Seaming & Looping Thread • ENTWIST Mercerized Cotton Yarn and Nylon Twisted Combination • WEARTWIST, the Domestic Mercerized Lisle • DYED YARNS

Where new products begin

HAVE YOU HELPED AMERICA TODAY?

Where, really, do new products begin?

In the brain of a busy executive or worker or customer who isn't satisfied with what's available. Sometimes as a spark between two active minds at the shop after hours, at the club after lunch, or at a meeting where men of different types are drawn together by a common air. Wherever new products begin, they almost always spring into first bloom in the form of a few seemingly mysterious hieroglyphics.

Industry today is bending all its energies toward winning the war through new and better products. But after the war the ingenuity and resourcefulness inherent in all American industry, from bottom to top, will again be directed toward new products, better products, for peacetime living. Better metals, better plastics, better things made from wood and rubber and glass and ceramics, better foods and textiles. And most of them will depend, for their excellence, on *chemicals.*

PITTSBURGH
PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
GRANT BUILDING . . . . . PITTSBURGH (19), PA.
Chicago • Boston • St. Louis • Pittsburgh • New York
Cincinnati • Cleveland • Minneapolis • Philadelphia • Charlotte

COLUMBIA CHEMICALS

SODA ASH · CAUSTIC SODA · LIQUID CHLORINE · SODIUM BICARBONATE · SILENE (Hydrated Calcium Silicate) · CALCIUM CHLORIDE
SODA BRIQUETTES · MODIFIED SODAS · CAUSTIC ASH · PHOSFLAKE · CALCENE (Precipitated Calcium Carbonate) · CALCIUM HYPOCHLORITE

and this is another wartime job for — TUFFER CARD CLOTHING

Along with her brothers-in-arms she must have adequate and safe work clothing. This is just part of the production job and just part of the reason why card room efficiency should be kept at its peak.

During this emergency we cannot urge you too strongly to make regular and more frequent inspections of your card clothing. If it shows undue wear consult your Tuffer Card Clothing engineer. He can help you keep it rolling. If it's worn beyond repair replace with Tufferized Card Clothing. This exclusive patented process is your guarantee of accuracy and uniformity hitherto unknown in the manufacture of card clothing.

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants	Atlanta, Ga., Gastonia, N. C.
Branch Offices	Philadelphia, Pa., Dallas, Texas
Canadian Agents	Colwool Accessories, Ltd., Toronto 2

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

ALOYCO STAINLESS STEEL VALVES

OFTEN REPLACE -Seldom Replaced!

ALOYCO

Stainless Steel VALVES and FITTINGS

GATE VALVES • GLOBE VALVES
Y VALVES • CHECK VALVES
LEVER THROTTLE GATE VALVES
TANK VALVES • SCREWED FITTINGS
FLANGED FITTINGS
GAUGE GLASS FITTINGS

WHEN ALOYCO Valves and Fittings are installed to combat difficult corrosion conditions, they last for exceptionally long periods because they are built for the particular job.

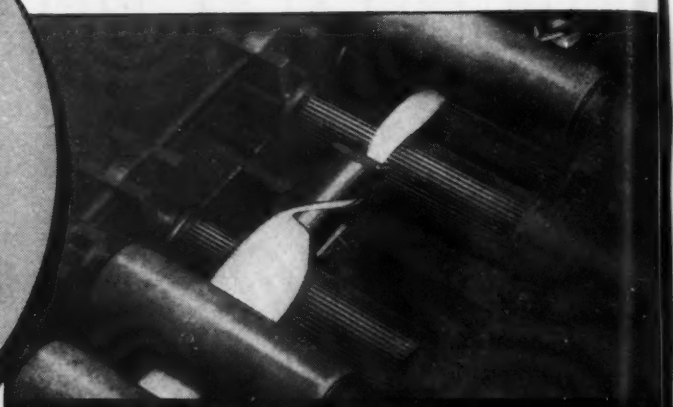
The unusual durability and satisfactory service of ALOYCO Valves are definitely the result of specialization in the design and production of Stainless Steel Valves and Fittings. It is no side-line with us. We devote our full time and attention to this specialty. Every step in the design and manufacture of ALOYCO Stainless Steel Valves and Fittings is rigidly controlled by special methods developed out of our concentrated experience.

It is natural, therefore, that engineers and plant executives in the explosives, chemical, food, textile, pharmaceutical, petroleum, and other process industries, turn to ALOYCO for authorative information and dependable service in problems of corrosion, stain or contamination in pipe lines. Write or telephone and we will be glad to serve you, also.

Alloy Steel Products Company, Inc., 1300 West Elizabeth Avenue, Linden, N. J.

IT'S NOT TOO EARLY TO PLAN FOR POST WAR RENOVATION AND MODERNIZATION

H & B 4-ROLL HIGH-DRAFT ROVING SYSTEM
WITH PATENTED SCROLL CONDENSER



H & B 5-ROLL HIGH-DRAFT ROVING SYSTEM
WITH PATENTED SCROLL CONDENSER

H & B 4-ROLL HIGH-DRAFT
SPINNING SYSTEM

YOUR ROVING AND SPINNING DEPARTMENTS ARE GOOD PLACES TO START, BECAUSE H & B EQUIPMENT HERE OFFERS QUICK RESULTS WITH A COMPARATIVELY SMALL INVESTMENT

Any one of the three systems pictured above is adaptable to any standard make of frame. If your present frames are in comparatively good condition, but outmoded in productive capacity, plan to have us equip them with one of our high-draft systems at the earliest opportunity.

The change overs will require a relatively short time and the cost will be surprisingly low, because of the simplicity of these systems. For the same reason upkeep and maintenance will be comparatively little. Having no belts, these systems are easy to clean, easy to operate and readily adjusted. Important power savings will also follow, because of the great reduction in spindles required for a given production.

The quality of work produced is A-1 in all three cases.

Let our engineers help you to plan now.

H & B AMERICAN MACHINE COMPANY

PLANT AT PAWTUCKET, RHODE ISLAND

BOSTON OFFICE: 161 Devonshire St.; ATLANTA OFFICE: 815 Citizens & Southern National Bank Bldg.; CHARLOTTE OFFICE: 1201-3 Johnston Building
EXPORT DEPARTMENT: United States Machinery Co., 115 Broad St., New York, U. S. A.

STAR "POWERS" THIS MODERN SUBMARINE
for antennae mast hoist
for two periscopes—each a motor, a hoist and a brake
for bow plane tilting
for bow plane rigging, anchor windlass and bow capstan
for hydraulic steering gear
for low pressure ballast unloader
for stern plane tilting

In the tight spots it's a STAR

There are many "tight spots" on the modern submarine. In your product, there may be just one. But in that "tight spot," a Star Electric Motor will do its part—and do it well. To begin with, it will "fit" the spot. It will do so thanks to Star's unique welding process, which adapts various H.P. requirements to various shapes and sizes — and does this without special molds, without special castings. And it will "fit" the job—for the same Star engineers, who provide "packaged power" to control the periscopes and steering gears of the machines of war, also provide "packaged power"—*tailored to fit*—for the products of peace.

Star Electric Motor Co., Bloomfield, N. J.

FOR 33 YEARS, Star Motors have provided a complete line of standard as well as specialized motors—in sizes from ½ to 200 H.P. Today they are providing dependable power for many applications. Please write us about your requirements today.

POWER ***PACKAGED*** *AS YOU NEED IT*

ARMY E NAVY

STAR MOTORS

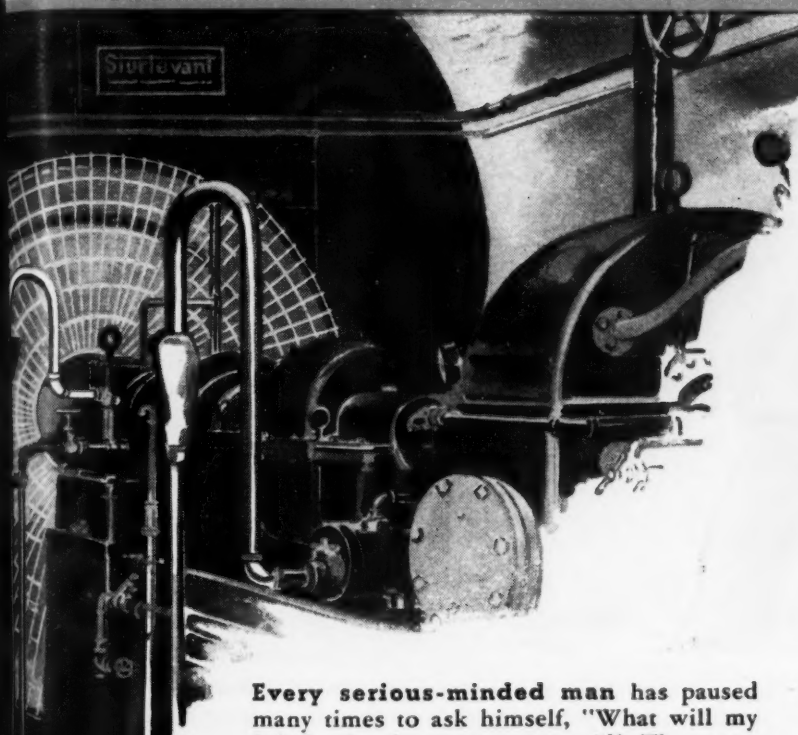
Sturtevant Equipment

REG. U. S. PAT. OFF.

AND SYSTEMS

ENGINEERED FOR PRECISION-VENTILATING, HEATING, AIR CONDITIONING, DRYING, DUST AND FUME CONTROL, PNEUMATIC CONVEYING, MECHANICAL DRAFT

. . . in the post-war world!"



Every serious-minded man has paused many times to ask himself, "What will my job be in the post-war world? The exact answer, of course, cannot be known. But daily the pattern of shadows forecasting things to come grows more definite.

Men in the armed forces are already working with many of the epoch-making post-war products which will be the backbone of our peacetime rebuilding. Knowing the toll taken by long hours of overloading, you can start now to plan for your plant's post-war facilities. Sturtevant is in a position to pitch right in and help.

We can assure you that Sturtevant Fans and other Mechanical Draft Equipment will continue to meet your severest requirements . . . whether for highest speeds, largest volumes, highest pressures or temperatures. Tomorrow, as in the past, you can look to Sturtevant for the new techniques and improved equipment which will help you squeeze the last atom of energy out of your fuel.

AXIFLO . . . 40% SPACE SAVING

The Victory Axiflo Fan is an example. It's been called the most remarkable development in fan history. We are now building it only for U.S. warships, but later it will be available to you. Picture an axial flow fan that saves up to 40% in space and power, breaks 80 in decibel rating, works against pressures up to 60 inches water gauge. It is just waiting to get its teeth into some of your forced and induced draft problems.

Remember, much of America's equipment was old and worn even before the war started. Overworked by War's unremitting demands, equipment in many plants is now ready to be replaced by the last word in engineered air handling equipment and systems.

ENGINEERED AIR will make the difference...

Equipment that puts "Air to Work" more efficiently—not only to burn fuel but to ventilate, air condition, heat, dry, convey or control dust and fumes—will make the difference between profit and loss in many a post-war plant. A Sturtevant expert, working with your own post-war planning committee, is ready to find the solution to these air handling problems.

B. F. STURTEVANT COMPANY

Hyde Park, Boston, Mass. *Branches in 40 Cities*

B. F. Sturtevant Co. of Canada, Ltd., Galt, Toronto, Montreal

* *U. S. Patents No. 1,846,863: 1,989,413.*

Sturtevant

REG. U. S. PAT. OFF.

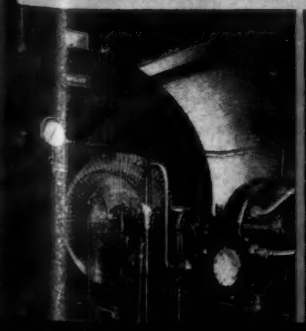
Puts Air to Work

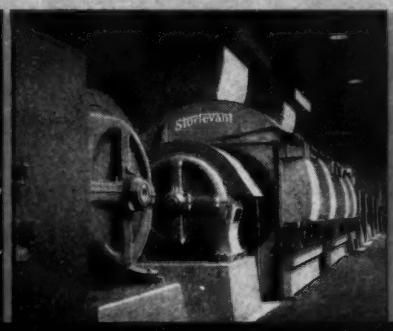
FORCED DRAFT—World's champion steam producer, 3 boilers, each rated 800,000 lb. per hour reached peak of 1,250,000 lb. with Sturtevant Fans, a world's record for East River Station, Consolidated Edison Co.

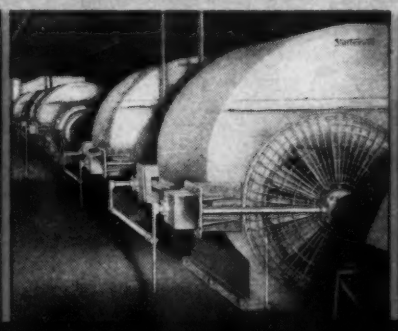
INDUCED DRAFT—World's largest installation, 47 Sturtevant Fans with capacity of 22 million pounds of gas and air per hour at Hudson Ave. Station, Brooklyn Edison Co.

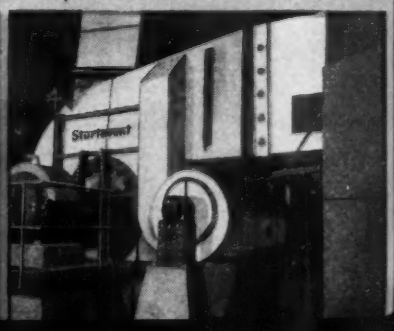
VANE CONTROL*—Like hundreds of other industrial and central station power plants, West Virginia Pulp and Paper Co., automatically control draft volume and pressure with Sturtevant Vane Control.

SAID FAN & COLLECTOR—Combined Fly Ash Collectors and Induced Draft Fans installed at Appalachian Electric Power Company, Cabin Creek, W. Virginia.









Profit by his Experience!

Many thousand years ago the hairy mammoth was lord of all he surveyed. Today he is only a museum curiosity, because he could not adapt himself to changing conditions.

Even the most prosperous of companies can become just a memory tomorrow, if it is not prepared to meet changing styles and changing economic conditions with FLEXIBLE equipment, such as the Foster Model 102 winder, which has a —

7-WAY FLEXIBILITY

1 It will wind any kind and any count of staple yarn from fine combed cotton or rayon for tropical fabrics to heavy wool yarns for arctic cloths.

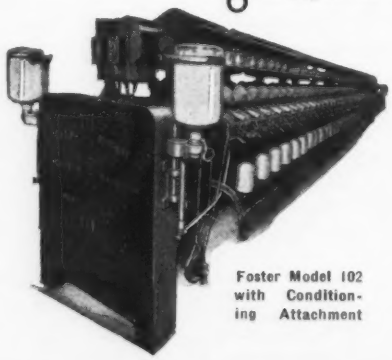
2 It will wind a straight base cone for warping or a convex base cone for knitting with a simple adjustment.

3 It will produce 9 different angles of wind from 9° to 18°. Important if you radically change your count or type of yarn.

4 It will wind package dyed yarn, even if damp. No jumping out of guides.

5 It will wind emulsion treated yarn. In fact, it is frequently equipped with an emulsion attachment.

6 Changeovers from cones to tubes, or vice versa, are comparatively inexpensive.



Foster Model 102 with Conditioning Attachment

7 One side can wind cones and the other tubes, if desired.

For today or tomorrow, Foster Model 102 Flexibility is an asset that you need. It also gives you TWICE THE PRODUCTION WITH ONE-THIRD LESS COST as compared with older Models.
These winders are available now to mills able to obtain the required preference rating.

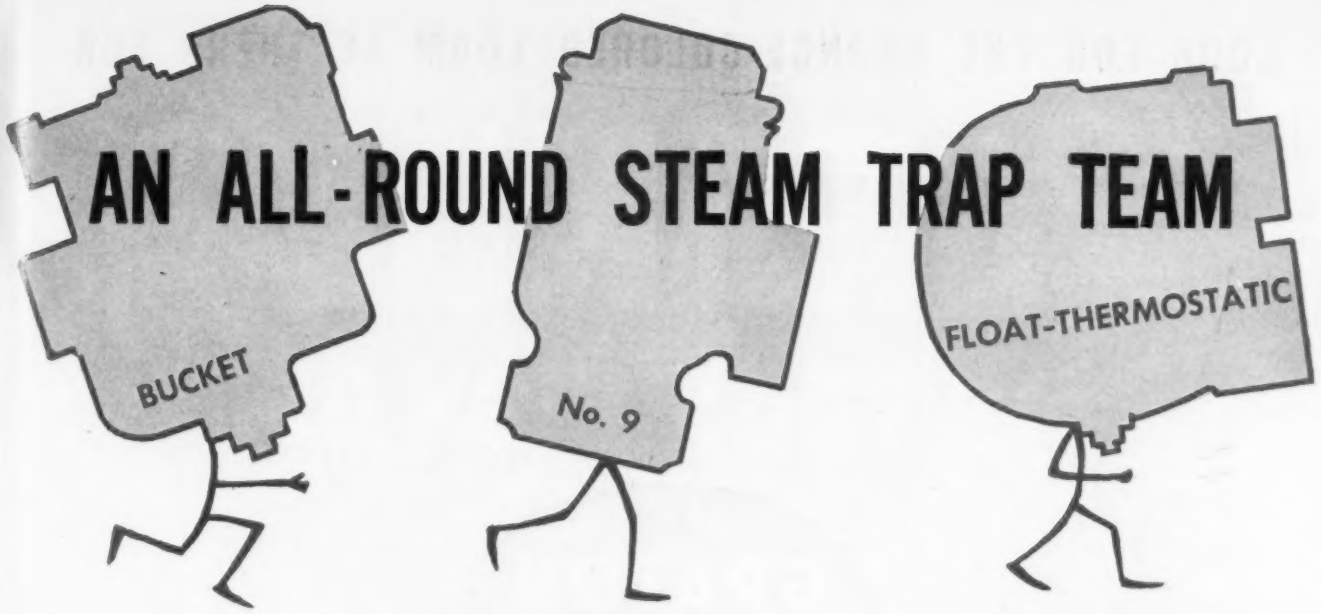
FOSTER MACHINE CO.
WESTFIELD, MASS.

Southern Office, Johnston Bldg., Charlotte, N. C.

FOSTER *Model* 102

For Winding Cotton • Wool • Worsted • Merino • Mercerized • Spun Silk & Spun Rayon Yarns

AN ALL-ROUND STEAM TRAP TEAM



Sprinter *Miler* *Cross Country*

FOR THE STREAMLINED PRODUCTION RACE

The coach of a track team never would send in a "miler" to do a "sprint". And you wouldn't expect four men who never met before to win a relay race.

Are you using the same good judgment with regard to steam traps in your plant? Just because one type of trap works well in one or two spots is no reason to standardize on that type for every job in the plant.

There are as many types of Sarco steam traps as there are runners in an outdoor meet. They are just as different. But all are aces in their own class and they know how to work together in the relay race where you use steam traps and temperature control. For instance —

The Sarco Bucket Trap is the sprinter — can speed up to take any load and is a bear for punishment. Cat. No. 350.

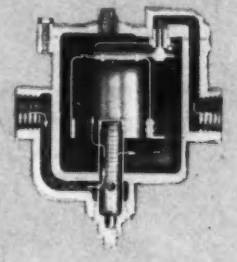
The Sarco No. 9 — thermostatic steam trap is like the miler, it conserves energy — can sprint on occasion, and can work on all pressures within its range. Cat. No. 250.

The Sarco Float-thermostatic steam trap is like the cross-country runner — it's ideal for the steady pull and particularly when used in connection with Sarco temperature control. Cat. No. 450.

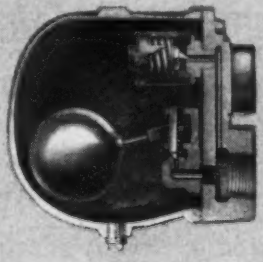
Sarco makes many types of simple self-operated regulators which work well with these traps. Get full information from the nearest Sarco representative, or write for Catalog No. 600.

TR-21

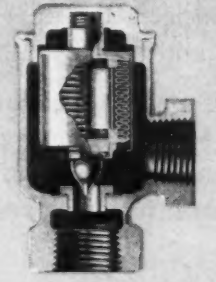
12



BUCKET



FLOAT-THERMOSTATIC



No. 9

SARCO COMPANY, INC.
475 FIFTH AVENUE
NEW YORK 17, N. Y.

SARCO

Represented in Principal Cities

SARCO CANADA, LTD., 85 Richmond Street, West, TORONTO, ONTARIO

Saves Steam

LOOK FOR THE ORANGE-COLORED LOOM LEATHERS FOR

ORANGE

IS YOUR SIGN OF

GRATON AND KNIGHT

QUALITY-CONTROLLED LEATHER

from Green Hide

You can depend on any loom leather bearing the characteristic orange color of Graton & Knight's ORANGE LINE for superior performance over a longer period of time. That's because every item in the ORANGE LINE is made from start to finish under one roof . . . with one uniform control . . . with a specific service in view.

Graton & Knight selects its own hides, tans and finishes its own leather, fabricates its own products and inspects the final result according to its first-hand knowledge of the industry's requirements.

This means that the qualities you need for specific loom services are developed throughout all steps of manufacture. From more than 30 variations of five basic formulas and from hundreds of finishes, the *one* is selected which will provide the qualities we know you want.

Hairitan—for severe loom service

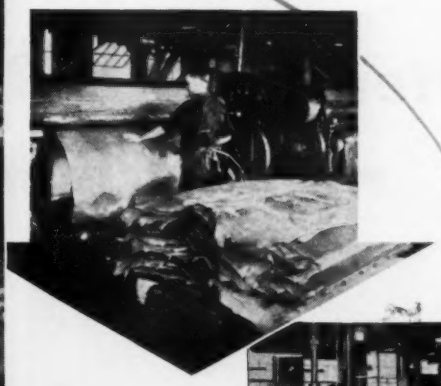
Among the tannages is Hairitan, a G&K-developed leather which, in the opinion of our customers, is superior to any hair-on leather ever tanned in this country or abroad. Used in check straps, for example, it has exactly the desired resilience, with extremely little permanent stretch . . . averages 6500 lbs. tensile strength . . . yet weighs less, giving more straps per pound.

Hairitan is also used for "Pickmaster" pickers and other loom accessories. When you see the orange color, you can be sure you will benefit from a product made throughout under a single control of quality.

THE ORANGE LINE

ONE QUALITY CONTROL FROM HIDE TO LOOM

Large stocks permit selecting best hides for each product.



Finishing leather in Curry Department.

Cementing "2-Fold" check strap endless.

Stitching "2-Fold" check strap.

to Finished Product

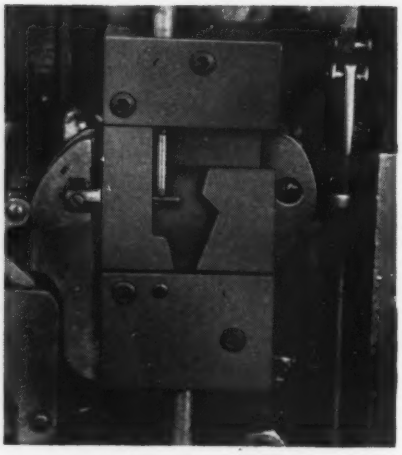
Graton & Knight "2-Fold" CHECK STRAP. The strap conforms in use to the arc of the picker stick, distributing wear and frictional heat—thus lengthening life. Made from a *single* piece of Hairitan leather.

GRATON & KNIGHT CO.

WORCESTER 4, GRATON & KNIGHT MASSACHUSETTS

Supplied by the leading distributors to the Textile Industry . . . Look under "Graton & Knight" in "Belting" section of Classified Telephone Directory or THOMAS' REGISTER

better Methods with mechanical fingers



A connecting link assembly machine which replaces human fingers and eliminates the possibility of error.

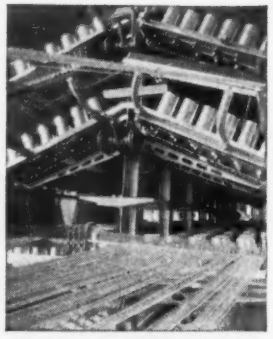
Machine designers have done amazing things in multiplying power and speed. Even more astonishing are their achievements in creating machine assemblies which perform work that previously only human fingers could do. Baldwin-Duckworth engineers, in constantly striving to give these designers and mill superintendents the finest roller chain belts for power transmission and conveying tasks, have themselves designed outstanding machines to make them. This connecting link assembly machine, for example, completely replaces hand-sorting of non-symmetrical pins having a tenon at one end and a cotter pin hole in the other. Its mechanical "fingers" turn end-for-end, and place the pins correctly as they come from the hopper, eliminate all possibility of error, and assure a uniformly assembled finished product.

better Drives with Baldwin Roller Chain Belts

Roller chain belts provide better solutions for many drive problems. It is equally true that *better* roller chain belts give even better drives. This fact lends meaning to the precision methods of Baldwin manufacture. It accounts for the unfailing dependability, the split-second timing, jerk-free smoothness and virtually 100% efficiency which characterize Baldwin drives. It is worth remembering, too, that *chain belts are the only medium of power transmission that can absorb shock loading without loss of speed ratios or efficiency.*

Your Baldwin-Duckworth catalog will give you data on standard applications of chain belts, and for specialized applications a Baldwin man will supply any information you may require. He will be glad to work with you on transmission or conveying operations of any machine which you may be designing, adapting or which needs greater timing or drive efficiency. Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield St., Springfield, Mass.

EXAMPLE



This creel uses Baldwin Roller Chain Belt because it delivers:

1. Positive maintenance of speed ratios.
2. Smooth, quiet, jerk-free operation.
3. Equal efficiency on both long and short centers.

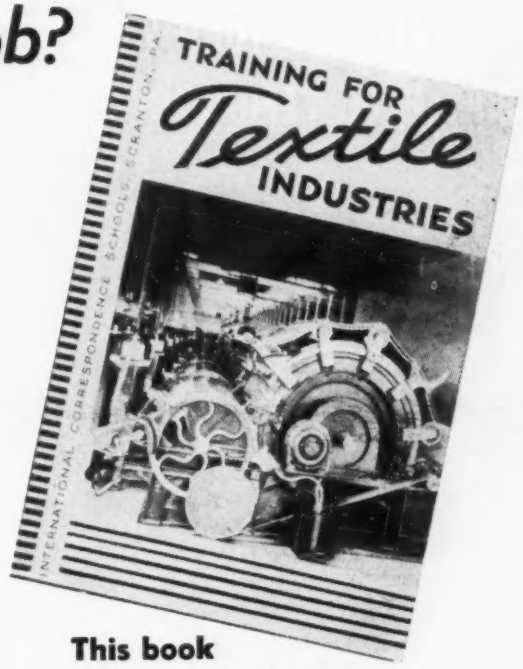
IT'S BALDWIN-EQUIPPED

better Drives through better Methods

BALDWIN

ROLLER CHAIN BELTS

Have You a Skilled Man Ready for That Vacant Job?



This book Gives Full Information for Textile Mill Managers

WAR jobs beckon to textile workers—with the allure of bigger wages.

So the men and women who stick to you MUST feel that the TEXTILE INDUSTRIES and *your* mill afford them secure employment with a *future*.

Much success in developing this interest in employees' work and desire to stick to the job, for future security, has marked the efforts of the International Correspondence Schools in the Textile Industries.

To-day I.C.S. offer to Textile Mill managers and personnel men—a free consultation service. The Cooperative Training Division is made up of men with long experience in industrial work. They will confer with your management in setting up courses—either Adult Training or Apprentice Training—which will fit in with your present training system and with your work schedule.

I.C.S. aims to enroll your employees in courses which parallel present jobs and which will fit them for more skilled work and supervisory positions.

With I.C.S. cooperative training, you need make no changes in shifts to accommodate the employees' study time. Study may be accomplished in off-hours, regardless of shift times.

A RECORD OF RESULTS

Let us submit to you a record of the results of I.C.S. cooperation in employee training. Write for the book—"TRAINING FOR TEXTILE INDUSTRIES".

Address Dept. 9338-B

International Correspondence Schools

SCRANTON, PA.

SIXTEEN Practical TEXTILE Courses

See the special training available, and look into the scope of these courses:

Courses in Cotton Manufacture

1. Cotton Manufacturing
2. Cotton Carding and spinning.
3. Cotton Warp Preparation and Plain Weaving
4. Fancy Cotton Weaving.
5. Cotton Carding, Spinning and Plain Weaving.
6. Yarn Reeling, Winding and Warping.

Courses in Woolen Manufacture

7. Woolen Manufacturing.
8. Woolen Carding and Spinning.
9. Woolen Warp Preparation and Weaving.
10. Worsted Warp Preparation and Weaving.
11. Wool Carding, Spinning and Weaving.

Courses in Textile Designing

12. Textile Designing.
13. Theory of Textile Designing.
14. Cotton Designing.
15. Woolen and Worsted Designing.

Rayon Slashing and Sizing

16. This course fills a decided gap, as books and information were lacking until it was prepared.

Dept. 9338-B, International Correspondence Schools, Scranton, Pa.

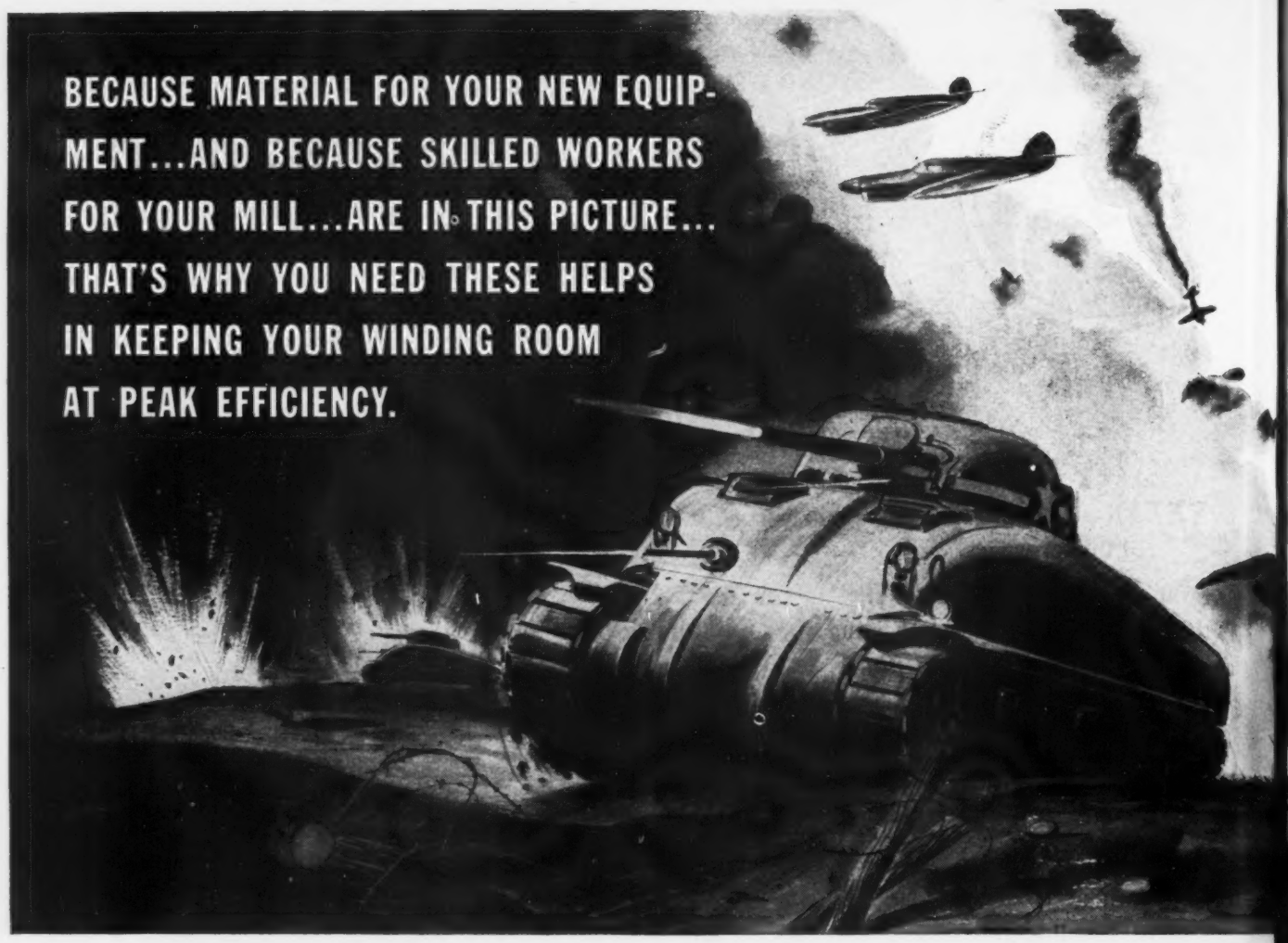
Send me, without obligation, full information on Cooperative Training ☐
Complete details on Textile Courses ☐

NAME .....

TITLE .....

COMPANY .....

ADDRESS .....


BECAUSE MATERIAL FOR YOUR NEW EQUIP-
MENT...AND BECAUSE SKILLED WORKERS
FOR YOUR MILL...ARE IN THIS PICTURE...
THAT'S WHY YOU NEED THESE HELPS
IN KEEPING YOUR WINDING ROOM
AT PEAK EFFICIENCY.

Suggestion 1.

Keep Up with Winding Developments Through "Getting the Most from Winding"

"Getting the Most from Winding" gives information on recommended operation of your winding machines. Problems in connection with winding are discussed, especially those which involve keeping the machine in good order. Individual parts and attachments are described. It is published six times a year in the textile magazines and is expanded for our mailing list. A set of these booklets should be in the hands of every Universal winding machine fixer.

Suggestion 2.

Send for Universal's New Maintenance Booklets

Two recently-published booklets are the first in a series on the care of Universal Winding Machines. "Keeping Your 50 Physically Fit" and "How to Keep Your Roto-Coners* Healthy and Happy" contain practical information, in convenient form, on where, when and how to check lubrication . . . cleaning . . . adjustments to be checked regularly . . . points to be checked for wear . . . hints for the operator . . . what to look for first in case of trouble.

43-M-2 *REG. U. S. PAT. OFF. AND PRINCIPAL FOREIGN COUNTRIES

UNIVERSAL WINDING COMPANY

THE METAL that would be used in your new winding machines . . . the skilled mechanics who would be keeping your present machines in top running order . . . are heading overseas . . . leaving you with the problem of getting desired production and desired quality from equipment that may need either replacement or expert attention.

Universal Winding Company has a wartime plan to relieve your winding room worries.

The Universal Winding Machines which you are now operating were originally designed and manufactured to give you long life and trouble-free service. For example, many fast-moving parts are automatically lubricated . . . parts requiring frequent attention are few in number . . . controls and adjustments are easy to make.

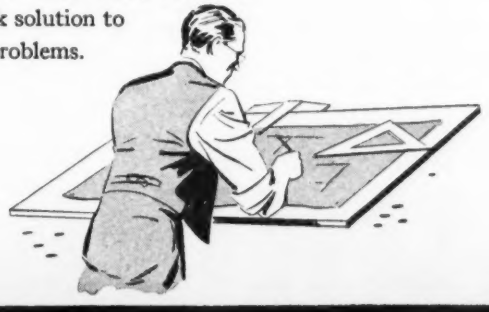
Still, as with any machinery, a good service record is due only partly to the machines themselves . . . part is due to intelligent supervision, systematic maintenance.

So here are four suggestions — which many mills have already acted upon, to help keep machines up to par when mechanics are hard to get and keep . . . and even repair parts may be delayed.

Suggestion 3.

Send Special Problems to Our Engineers

We maintain a winding room where a great many sample and experimental windings are made. If you have new winding requirements . . . or are handling a yarn with special characteristics . . . or have difficulty obtaining the production or quality you desire . . . call on our Engineering Department. Familiar with the winding of all types of yarn under all types of conditions, it is your most likely source of a quick solution to your problems.



Suggestion 4.

Have Our Resident Engineer Look Over Your Equipment

Universal maintains branch offices staffed with regional engineers, in Boston, Utica, Philadelphia, Charlotte and Atlanta, and is also represented in Chicago, Montreal and Hamilton. Part of their job is making recommendations to help keep your winding machines in top operating condition. Give them your problems when they call — in an emergency, get in touch with the nearest office.

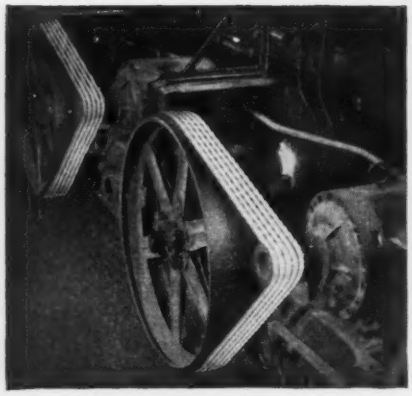
. O. BOX 1605, PROVIDENCE 1, R. I.

LEESONA

REG. U. S. PAT. OFF. AND PRINCIPAL FOREIGN COUNTRIES

BOSTON
PHILADELPHIA
UTICA
CHARLOTTE
ATLANTA

Which of these
GATES V-Belts
Best Fits *YOUR* Needs?



– Steel Cable *Belts?*
– Rayon Cord *Belts?*
– Cotton Cord *Belts?*
– Static Reducing *Belts?*
– *Belts of* *Special* Synthetic Rubber?

Phone Your Gates Field Engineer– *He Will TELL You!*

Whenever a drive in your plant gives you even the slightest trouble, it is a good plan to phone the Gates Field Engineer. He is a specialist who *makes a business* of improving drive operation.

For example, it quite frequently happens that one or more drives in a plant will wear out belts faster than seems warranted. In most cases a slight correction in groove angle, an adjustment in tension or, at most, a minor change in drive design will correct the difficulty and save money not only in belt wear but also in increased efficiency of the machine.

At times, however, the service conditions are such that a V-belt of special construction can most profitably be used. Your Gates Field Engineer will *know*—and he can supply a Gates V-belt that is precisely engineered to meet the unusual conditions.

The Gates V-belt of special synthetic rubber is a case in point. During the past five years, Gates has supplied industry with thousands upon thousands of these belts. Under severe conditions of heat and oil, the Gates special synthetic belt actually outwears any natural rubber belt by as much as 230%.

In your particular application, V-belts whose tension members are composed of flexible steel cables—or of rayon cords—may prove to be the most efficient and economical. Static-reducing V-belts may best fit your special need.

In any case, the wisest move you can make is to phone the Gates Field Engineer. He is thoroughly competent to analyze any drive problem. He is completely informed on on the nature and advantages of every type of belt. He will always recommend the practice that will be most efficient and economical for you.

THE GATES RUBBER COMPANY

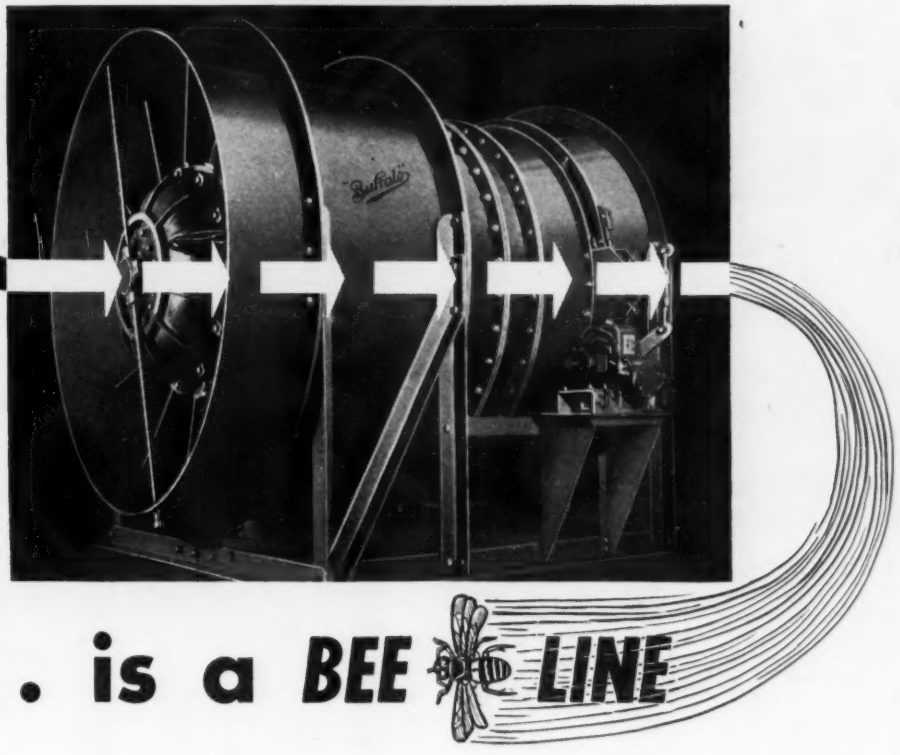
Engineering Offices and Stocks in All Large Industrial Centers

4310

GATES VULCO ROPE DRIVES

CHICAGO, ILL. 549 West Washington
DALLAS, TEXAS 2213 Griffin Street
NEW YORK CITY 215-219 Fourth Avenue
BIRMINGHAM, ALA. 801-2 Liberty National Life Building
DENVER, COLO. 999 South Broadway
CHARLOTTE, N. CAROLINA 507 Builders' Building
GREENVILLE, S. CAROLINA 104 West Washington Street
ATLANTA, GA. 738 C. & S. National Bank Building

THE SHORTEST DISTANCE between inlet and outlet...



. . . is a BEE LINE

. . . and this "Bee Line" travelled by the air current through a "Buffalo" Axial Flow Fan is a noteworthy accomplishment in fan engineering. Propelled in a true axial direction, with special guide vanes providing a non-rotating movement as air leaves the outlet, the air flow is characterized by a minimum of turbulence and wasted energy — greatly increased fan efficiency on a wide range of applications. "Buffalo" Axial Flow Fans have an exceptionally high capacity operating against pressure losses, perform quietly and with marked power savings. These factors—plus a husky construction and the non-overloading characteristic — make "Buffalo" Axial Flow Fans *the* equipment to investigate for difficult air handling problems. Engineering data in Bulletin 3229B.

ARMY E NAVY

BUFFALO FORGE COMPANY
150 Mortimer St. **Buffalo, N. Y.**
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

"Buffalo" AXIAL FLOW FANS
"Air travels the bee-line route"

ON THE FIGHTING FRONTS!

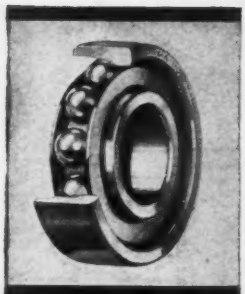
ON THE PRODUCTION LINES!

The PRECISION BEARINGS here pictured, together with many others from the comprehensive NORMA-HOFFMANN line, have literally "gone to war" for the Allied Nations.

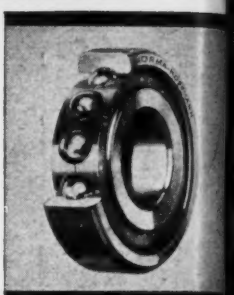
On the fighting fronts, they are "in the service" in every type of naval craft, from patrol boat to battleship—in bombers, fighters, scout planes, trainers and transports—in guns, tanks, mobile artillery, military transport and supply equipment.

On the production lines, NORMA-HOFFMANN Bearings are in thousands of machines, machine tools, and other vital mill and shop equipment that are turning out ships, armament and indispensable war materials for the American and Allied forces.

Let our engineers work with you.

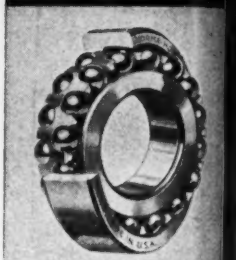


Separable (Magneto) Ball Bearing



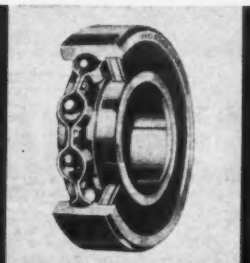
Litro ("CL") Composition Retainer Ball Bearing

Single Row Ball Bearing

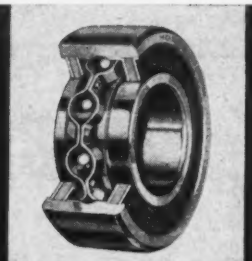


Double Row Self-Aligning Ball Bearing

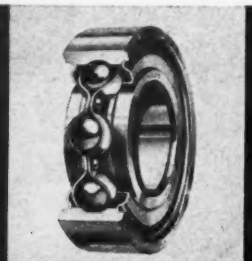
Shielded Type Single Row Ball Bearing



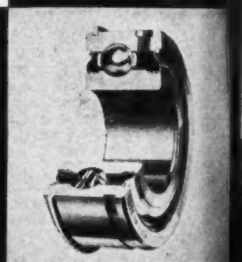
Single Felt Seal Ball Bearing



Double Felt Seal Ball Bearing



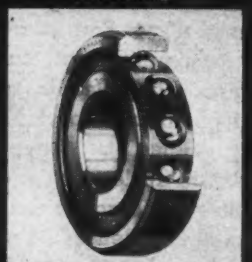
9000 Series (Feltless) Sealed Ball Bearing



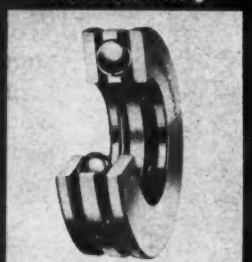
"Cartridge" Fully Sealed, Refillable Type Ball Bearing

Double Row Ball Bearing

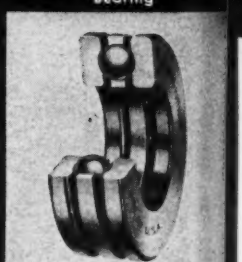
Extra Light Type Ball Bearing



Angular Contact Ball Bearing



Extra Light Single Direction Ball Thrust Bearing



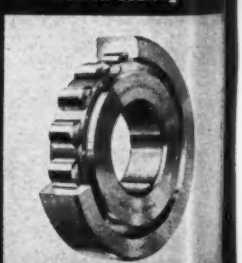
Single Direction Ball Thrust Bearing

Standard Cylindrical Roller Bearing

Type "E" Cylindrical Roller Bearing

Full Type (Retainerless) Cylindrical Roller Bearing

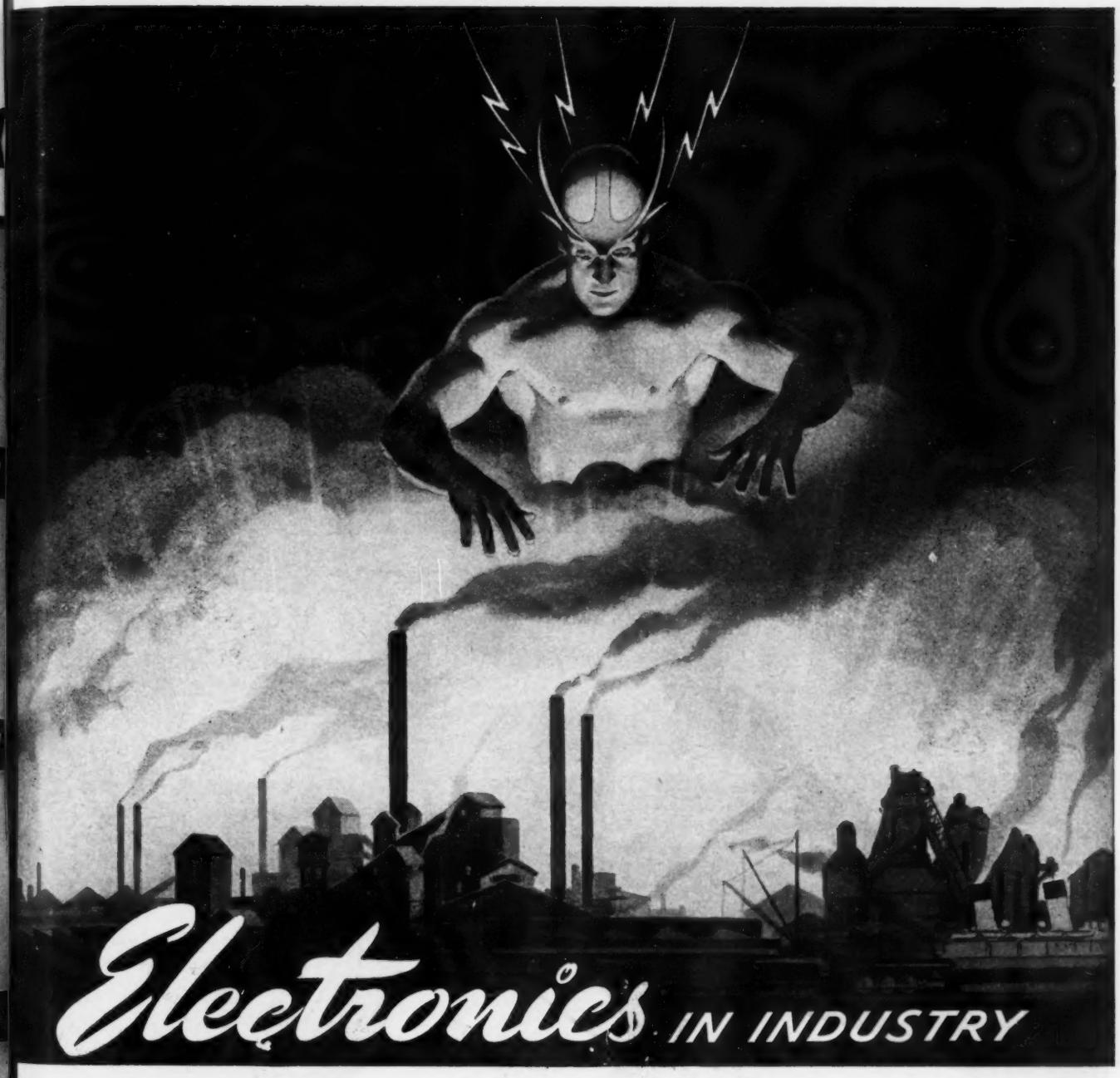
Extra Light Cylindrical Roller Bearing



Two-Lipped Cylindrical Roller Bearing

NORMA-HOFFMANN BEARINGS CORP'N, STAMFORD, CONN., U. S. A. • FOUNDED 1911

TO WIN THE WAR: Work — *Fight* — Buy War Savings Bonds



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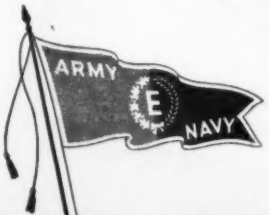

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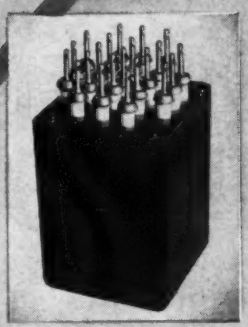
Excerpt from "A Special Report on America's Industrial Future" by The Research Institute of America.

"At the end of the twelve-month period (July 1944), large areas of slowing down and actual cessation in war manufacture will be appearing. This will be a critical period for many companies . . . IT IS THE PERIOD TOWARD WHICH EXECUTIVE THINKING AND PLANNING SHOULD NOW BE DIRECTED"



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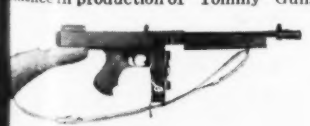

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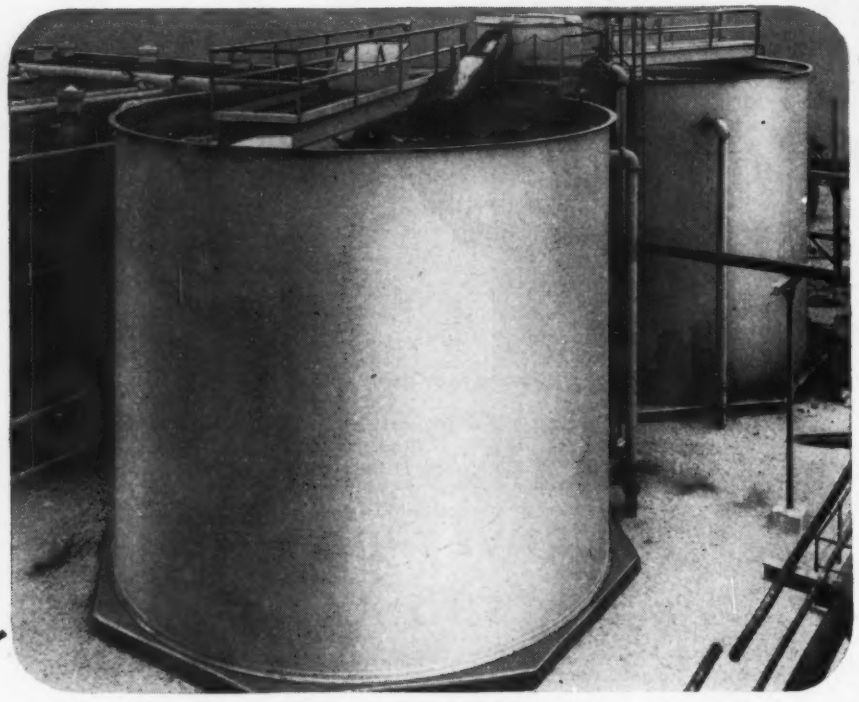
REACTION AND SETTLING TIME REQUIRED



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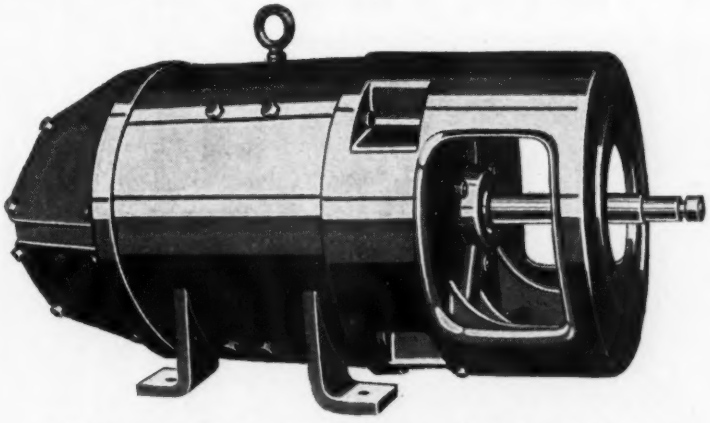

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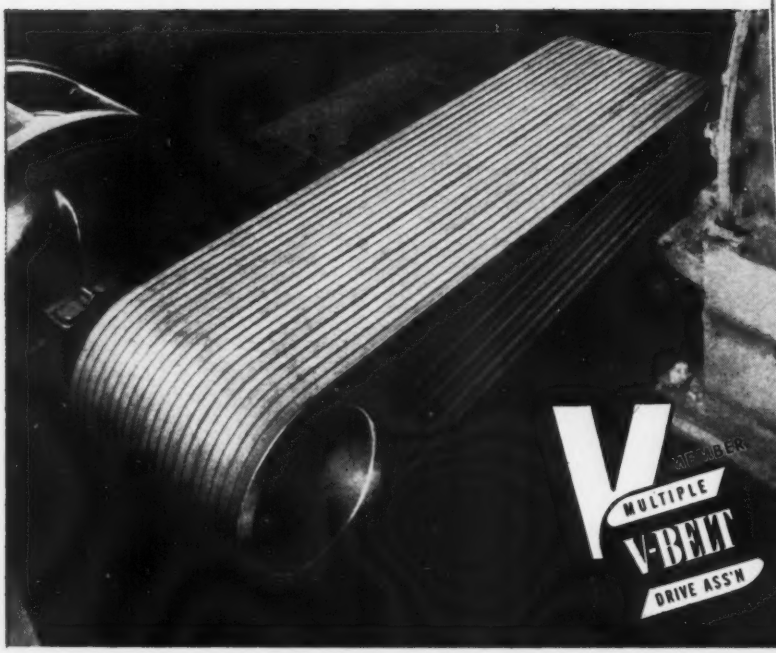

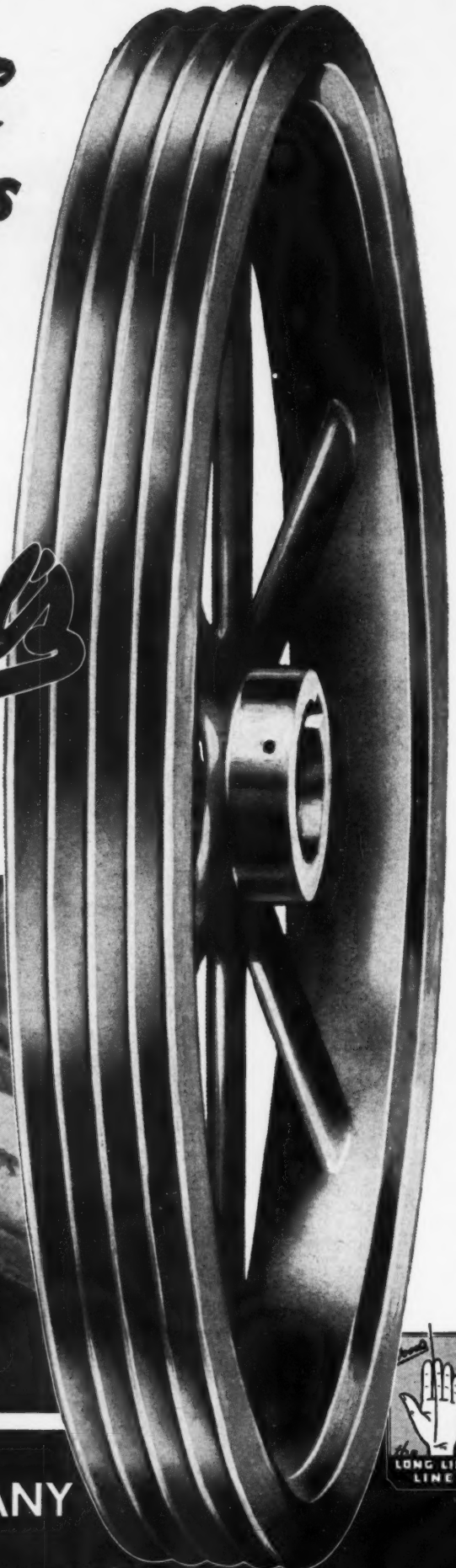

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RIGHT
WRONG
USE THE AIR YOU NEED
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DON'T clean your clothes or hair—it's dangerous and wasteful
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LEAKS AND WASTE LOWER AIR PRESSURE and SLOW PRODUCTION
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SLOW DOWN PRODUCTION
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CITY ..... STATE .....

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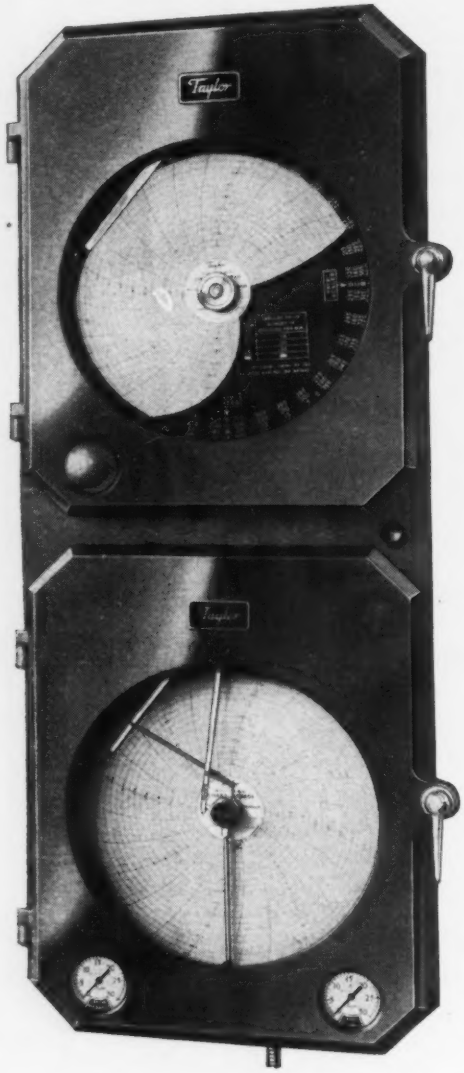
How would YOU do it?

● How would you carry out the dyeing schedule described in this clipping?

There's no catch in this. It's merely part of a recommended procedure for dyeing pile fabrics. But our point is this:

If you followed this schedule literally and accurately, you'd probably be busier than an M.P. on payday—*unless you had the benefit of Taylor Automatic Control!*



Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow, and liquid level.

is done in an acid bath.

The dyebath is prepared by adding the required dyes (which have been previously dissolved), 3 to 5 gal. of sulphuric acid, and either 75 lb. of anhydrous sodium sulphate or 160 lb. of crystalline glauber salt. British gum, if used, is first pasted up with cold water and mixed until smooth and lumpless before it is added to the bath. To aid in thoroughly mixing the bath, it is advisable to run the lot for 10 min. or so cold before turning on the steam. The temperature is then raised to 190°F. in 1 hr. and held at that temperature for another hour. If additional dye is required, the adds are run at about 190°F. for 20 min., or as long as is needed to exhaust the bath.

Great care must be taken in both

Here's how WE'D do it!

● How would we tackle this problem? Instead of wasting the time of a skilled operator and worrying about his following instructions to the letter, we'd simply put on a Taylor Fulscope Time-Schedule Controller. Because with this instrument on the job, once the cam is cut to follow your ideal schedule, *all you do is load the vat and push the button!*

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IN HOME AND INDUSTRY

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..when we're in Tokio!

eeling cocky about the war?
etter not . . . you can't crow
ithout sticking your neck out!

• • •

ure, there have been . . . and there
ill be . . . successes along the road
Victory. But these must not make
y of us over-confident.

ome. Even Berlin! Just milestones
the long, hard road to Tokio.
ith a fanatical foe contesting every
ch of the way!

ly a tidal wave of men, materiel
d money will engulf Japan!

help swell this wave, American
dustry must have . . . at once:
OMEN . . . by the many
ousands to take the places of
en gone to war.

ven more important . . . EFFORT to
e point of sacrifice on the part of
ery man and woman in industry
. workers and bosses.

nother must . . . DOLLARS! . . .
d the coming Victory Loan
a further opportunity to show our
emies what their fate shall be.

• • •

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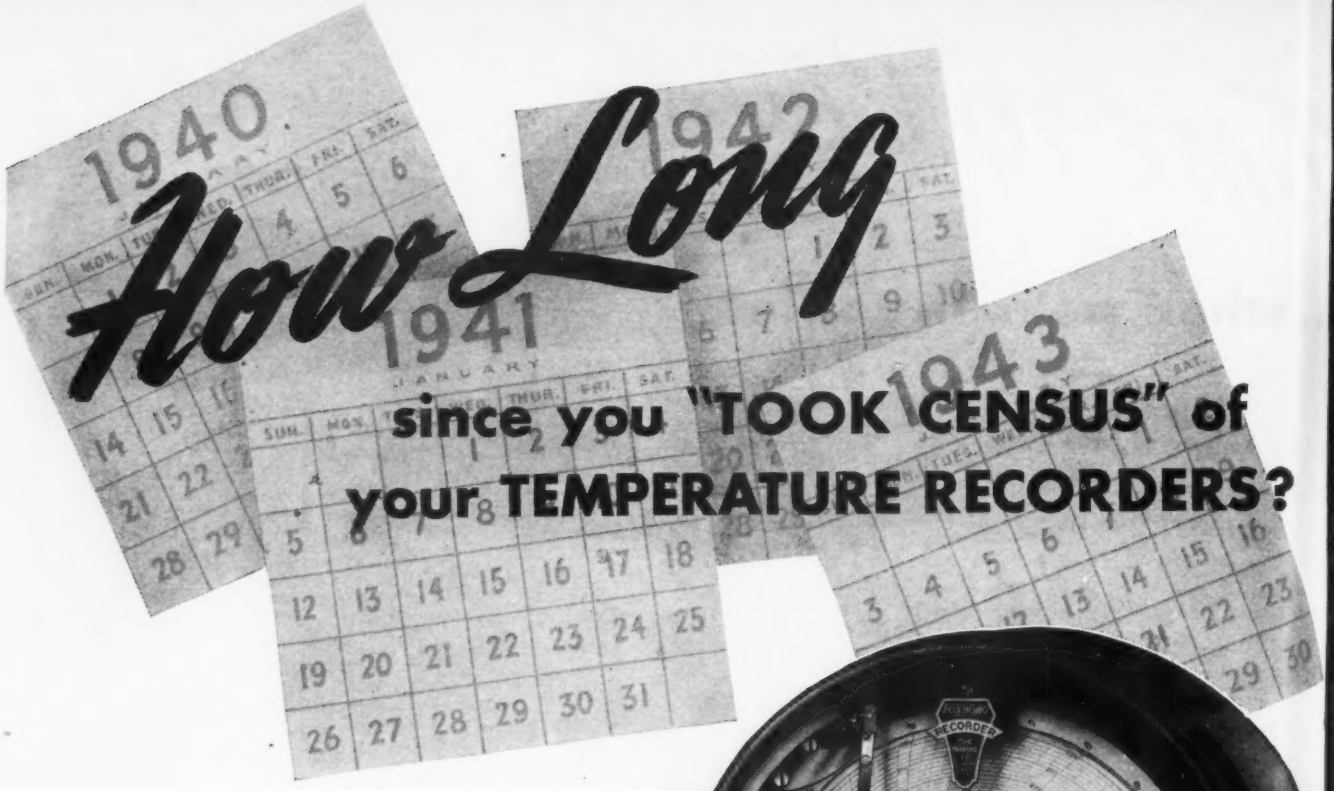

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Now's the time to check up whether you've been overlooking important installations

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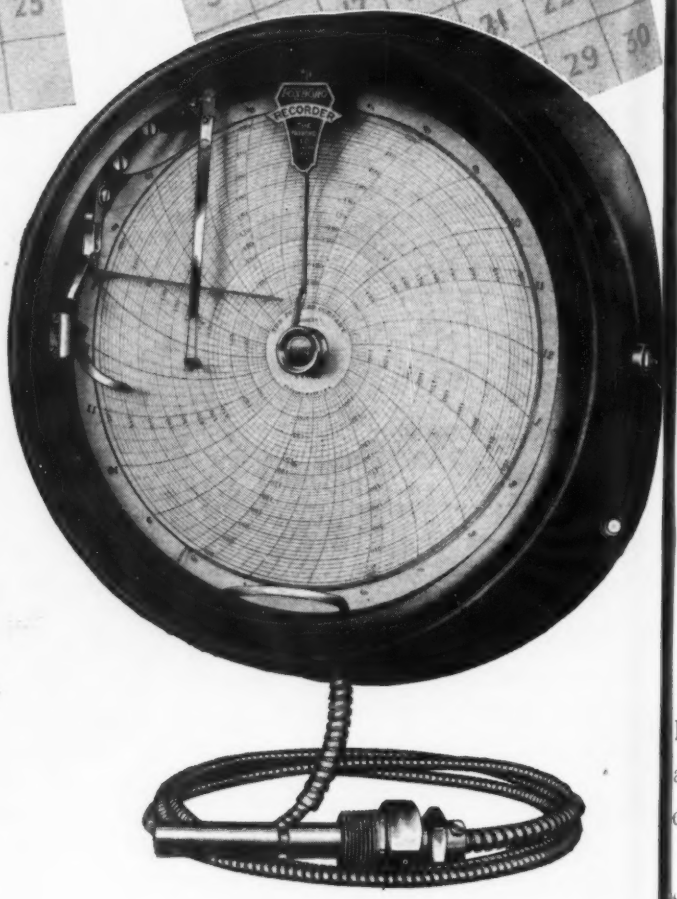

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TABLE OF CONTENTS

Edwin D. Fowle, *Publisher* — Douglas G. Woolf, *Editor*

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Earle Mauldin.....*Southern Editor*
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Textile World

OCTOBER, 1943 • VOLUME 93 • NUMBER 10

A McGRAW-HILL PUBLICATION

TEXTILE WORLD (formerly *Textile World Journal*) with which are combined *Textiles, Posselt's Textile Journal* and *Textile Advance News*. Published monthly. United States and Possessions and Latin American Republics, $1.50 a year; Canada and all other countries, $2, U. S. currency or 12 shillings. Single copy 25c. Annual index in "Textile World Yearbook & Catalog."

Of this Issue 16,600 copies were printed

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Management . . .

The Human Being, Post War *(Editorial)* 63
Edwin D. Fowle Becomes Editor of Textile World 64
Role of Textiles in Rehabilitation Plans 69
Annual Meeting of NACM 73
Post-War Planning Marches On—Many Committees at Work . . 74
Go Into Reverse on Textile Outlook 79

Methods . . . . . .

Parachutes and the New Fabrics They Require 65
Styling and Designing Consumer Fabrics for Post War Markets . 70
Point System For Grading Fabrics a Check on Defects 78
To Improve Winding Efficiency—Operatives and Upkeep . . . 80
Defects in Jacquard Fabrics Due to Weaving 82
How to Make Up the Loom Book to Schedule Yarn Use 84
Nomograph for Worsted Spinners—Package Weight and Yardage 85
Fabric Weight Determination with Dies and Templates 87
Finishing Worsted Barathea 89
Hints on Printing Napped Fabrics 89
Manual of Military Fabrics—Part IX—No. 6 Cotton Duck, Type I . 90
Temperature and Humidity Requirements in Hosiery Mills . . . 95
How to Handle Chemicals Safely 96
Secrets from Germany 98
Loomfixers' Manual—Wool 110
Fixing Hosiery Machines—Circular 112

Men . . . . . .

Should Bill Go Over His Boss's Head? 94
Pete & Bill Discussion 115
Memories of Old Man Carelessness 116
Employee-Morale Boosters 117
Mill Men's Round Table 125

Mill Engineering

Automatic Controls Speed Up Production 76
A Clean Floor Is a Safe Floor 86
More Data on Infra-Red Drying 88
Yarn Conveyors at May Hosiery Mill 92

Materials . . . . .

How To Make Blankets Warmer 77
Making It Stick—Adhesives in the Mill 98

For Contents by Industry Branches, See Next Page

Departments

Textile Equipment News	99	Mill Men's Round Table	125	Free for the Asking	123
News of the Month	121	Textile Calendar	150	News of Men	152
New Publications	104	Leading Editorial	63	Textile Mill News	166
Pete & Bill Discussion	115	New Dyes and Chemicals	102	Kinks & Short Cuts	119
Questions & Answers	126	News of Suppliers	104	Mill Maintenance Section	101

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IN THIS ISSUE

CONTENTS BY INDUSTRY BRANCHES

TEXTILES IN THE WAR

Parachutes—and the New Fabrics They Require... 65
The Role of Textiles in Rehabilitation..... 69
Post-War Planning Marches On..... 74
Go Into Reverse on Textile Outlook..... 79
Manual of Military Fabrics (Cotton Duck)..... 90

GENERAL

Styling and Designing Consumer Fabrics for Post-War Markets..... 70
Post-War Planning Marches On..... 74
Modern Controls Increase Production..... 76
A Clean Floor Is a Safe Floor..... 86
Fabric Weight Determination..... 87
Should Bill Go Over His Boss's Head?..... 94
Making It Stick—Adhesives in the Mill..... 98
Oiling Equipment for Bearings and Belts..... 99
Process for Surface Hardening Stainless Steel Parts.. 99
Motor Conditions Seen at a Glance..... 101
New Life for Old Chain Pins..... 102
Placing New V-Belts in Service..... 102
Preventing V-Belts from Climbing..... 102
Calculator for Mill Engineers and Electricians..... 120
Diagonal Blade Screwdriver..... 120

COTTON

Annual Meeting of NACM in Boston..... 73
Point System for Grading Fabrics..... 78
Go Into Reverse on Textile Outlook..... 79
To Improve Winding Efficiency..... 80
Defects in Jacquard Fabrics..... 82
How to Make Up the Loom Book..... 84
Manual of Military Fabrics (Cotton Duck)..... 90
Pneumatic Stop Motion for Frames..... 99
Parachute Web Testing Machine..... 100
Coning Operation Hints..... 101
How to Clean Heddles..... 119
Stripper for Condenser..... 120
Travelers for Long Draft Spinning..... 126
Regain in Blends..... 126
Tensioning Top Beams..... 128

WOOL

How to Make Blankets Warmer..... 77
Nomograph for Worsted Spinners..... 85
Finishing Worsted Barathea..... 89
Loomfixers' Manual—Wool..... 110
Device for Preventing Double Picks..... 119
Blending Wool Stock..... 126

RAYON AND SILK

Parachutes—and the New Fabrics They Require... 65
Point System for Grading Fabrics..... 78
Defects in Jacquard Fabrics..... 82
Coning Operation Hints..... 101
Dyes for Printing Acetate..... 102
Device for Preventing Double Picks..... 119
Regain in Blends..... 126
Drafts and Twists for Spun Viscose Rayon..... 127

KNITTING

Yarn Conveyors at May Hosiery Mills..... 92
Temperature and Humidity Control in Full-Fashioned Hosiery Mills..... 95
Fixing Hosiery Machines—Circular..... 112
Scouring Knit Goods..... 126

PROCESSING

More Data on Infra-Red..... 88
Hints on Printing Napped Fabrics..... 89
How to Handle Chemicals Safely..... 96
Dryer Attachment Increases Production..... 100
Protecting Air-Conditioning Equipment in Dye-houses..... 101
Dyes for Printing Acetate..... 102
Water Repellent..... 102
Scouring Knit Goods..... 126
Computing Pressure on Padders..... 128
Tolerances for Water Impurities..... 130

IN THE NEXT

THE ANNUAL MILL CHECK-UP SECTION will be the outstanding feature of the November issue. Leading off this section will be a comprehensive article on post-war buildings and engineering services. This will present what might be called the composite optimum textile plant which will be available in the immediate post-war years. It will give down-to-the-earth information on the developments which can be expected in new plants and in the revamping and modernization of existing mills. Following this will be a series of articles on maintenance techniques, covering welding, metalizing, cleaning, painting, and lubricating.

Among the articles tentatively scheduled for appearance in the regular section of the November issue are Facts About Cotton Card Flax Strips, Calculating Grease Weights of Wool, Increasing Efficiency in the Quilling Department, and new Developments in Manufacturing of Seamless Hosiery. Also to be covered is the annual meeting of the Cotton-Textile Institute which will feature post-war planning.

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Textile World

DOUGLAS G. WOOLF, EDITOR

The Human Being, Post-War

MUCH HAS BEEN SAID about post-war demand, post-war peak production facilities, post-war export possibilities, post-war reserves, post-war markets, post-war products. All of these demand careful planning and executive thinking. But there is one factor that has a priority over all those others, important as they are. That is the human being, post-war. In the field represented by this publication, that means the textile worker, post-war.

If there has been one lesson learned—or rather relearned—during the last quarter-century, it has been that the individual is the nucleus of wars and booms and depressions. It was the individual—let's call him Tom—who turned back the Huns in World War I. It is the individual—let's call him Dick—who by sweating and bleeding and dying is now turning the tide toward freedom in its greatest crisis in world history. It is the individual—let's call him Harry—who now mans (or womans) the war-producton front in textiles as in all other essentials of war.

But it is also the individual—let's call him Tom, Dick or Harry—who is squeezed by inflation and who, by his withdrawn purchasing power, is the real factor in depression.

It is this same individual who will come back from the wars or the war-plants—maimed or whole, skilled or unskilled, confident or afraid—seeking a way of life.

WHAT ARE WE going to do about him? Are we, in the textile industry, going to repeat the pattern of Post-World War I? Are we going to produce, like rabbits out of a hat, a lot of fancy gadgets such as Industrial Democracy, to keep workers satisfied during the possibly short period of post-war boom? Are we then going to let those workers drop to the bottom of the sink during the possibly long period of succeeding post-war depression?

To answer that question, we have to get down to fundamentals. What does a textile worker want from his employer—and what has he a right to expect? The answer is easy. He wants security against unemployment, sickness, and old-age. He wants the dignity of a job where he is made to feel that he is performing a useful service in exchange for his pay-envelope. He wants the feeling of responsibility in that job, whether it be great or small in the scale of things in his particular plant.

And that is what he has a right to expect.

HOW CAN WE give it to him? Here are a few tentative answers:

1. A continued wage-hour law is a must, if we are to protect textile workers from wage collapses, and incidentally protect ethical manufacturers from the wage-chiseling of the minority among their competitors.
2. Social security funds, jointly contributed by employers and employees, and supervised by the Government, are also a must.
3. Supplementary old-age pension plans, group insurance, etc., arranged by the individual companies through established insurance organizations, are also essential.
4. Sound personnel policies, in every individual company, are required to produce the feeling of individual responsibility which made human beings strong enough to fight for those who stayed at home, and which can not be denied to them when they return.

THAT IS NOT too large an order. It is, in fact, a very small order. It is the least that can be expected of industry.

Textile workers do not want a Senate and a House of Industrial Democracy; they do not particularly want swimming pools or bath-tubs. What they do want is a chance to make an honest living, relatively secure against the fears that beset all of us.

And by giving them that security, textile manufacturers will in turn take the greatest step toward making their own futures secure.

Douglas G. Woolf

Edwin D. Fowle Becomes Editor of Textile World

Succeeding Douglas G. Woolf, who joins Textile Research Institute

▶ Effective with the next issue, Edwin D. Fowle, publisher of TEXTILE WORLD, becomes also its editor-in-chief. In the latter capacity, he succeeds Douglas G. Woolf, who has resigned to become vice president and director of information of the Textile Research Institute, Inc., located at 10 East 40th St., New York, N. Y.

Mr. Fowle entered the textile industry in 1918, when he began work in the experimental cotton mill which the United States Rubber Co. then operated in Newark, N. J. He has often said that this proved to be an ideal introduction to textile manufacture, because the employees were so few that the entire staff followed the stock through the mill from raw fiber to woven fabric, and this gave him the invaluable experience of working on every machine in the mill.

TEXTILE WORLD's New Editor

After a brief period as plan-room clerk and draftsman's assistant with Lockwood-Greene Engineers, Mr. Fowle entered Lowell Textile Institute, taking the four-year engineering course, general option (covering various branches of the industry, including knitting), and graduated in 1924 with the degree of Bachelor of Textile Engineering. During this period he worked part time as a mill hand for the Nashua Manufacturing Co., Nashua, N. H., and also helped edit a number of the Institute's student publications, following an inclination which began with his founding of a weekly newspaper in high-school days. Also while a student, he gave evidence of writing versatility by turning out the three-act comedy, "Constantine Pueblo Jones," published in 1920 by Walter H. Baker & Co., of Boston.

Upon graduation from Lowell Textile Institute, Mr. Fowle conducted an investigation of textile-mill wastes for the Commonwealth of Massachusetts, and then joined the TEXTILE WORLD staff as an assistant editor in the Boston office. Here he aided Clarence Hutton, then technical editor, to win for TEXTILE WORLD the Associated Business Papers award for outstanding contribution to the growth of rayon textiles. Mr. Fowle recalls with amusement that he was at that time also chief draftsman of TEXTILE WORLD, and that one of the articles which he illustrated (and also wrote), on tying the weaver's knot and its variations, is still found hanging on mill walls and has been reprinted numerous times in this country and abroad.

In 1929 Mr. Fowle served as president of the Lowell Textile Institute Alumni Association, one of the youngest men to hold that office. The same year he was transferred to TEXTILE WORLD's New York office to become associate editor in charge of the technical department. Among the articles which he wrote during the eight years when he served in this capacity and which attracted particular attention were one proposing the Typp System as a universal basis for numbering yarns and another proposing the terms "S" and "Z" for designating directions of twist. The latter proposal has now been adopted by major textile countries throughout the world. Another achievement was his development of a so-called "modernization" formula designed to aid mills in their plans for replacing machinery.

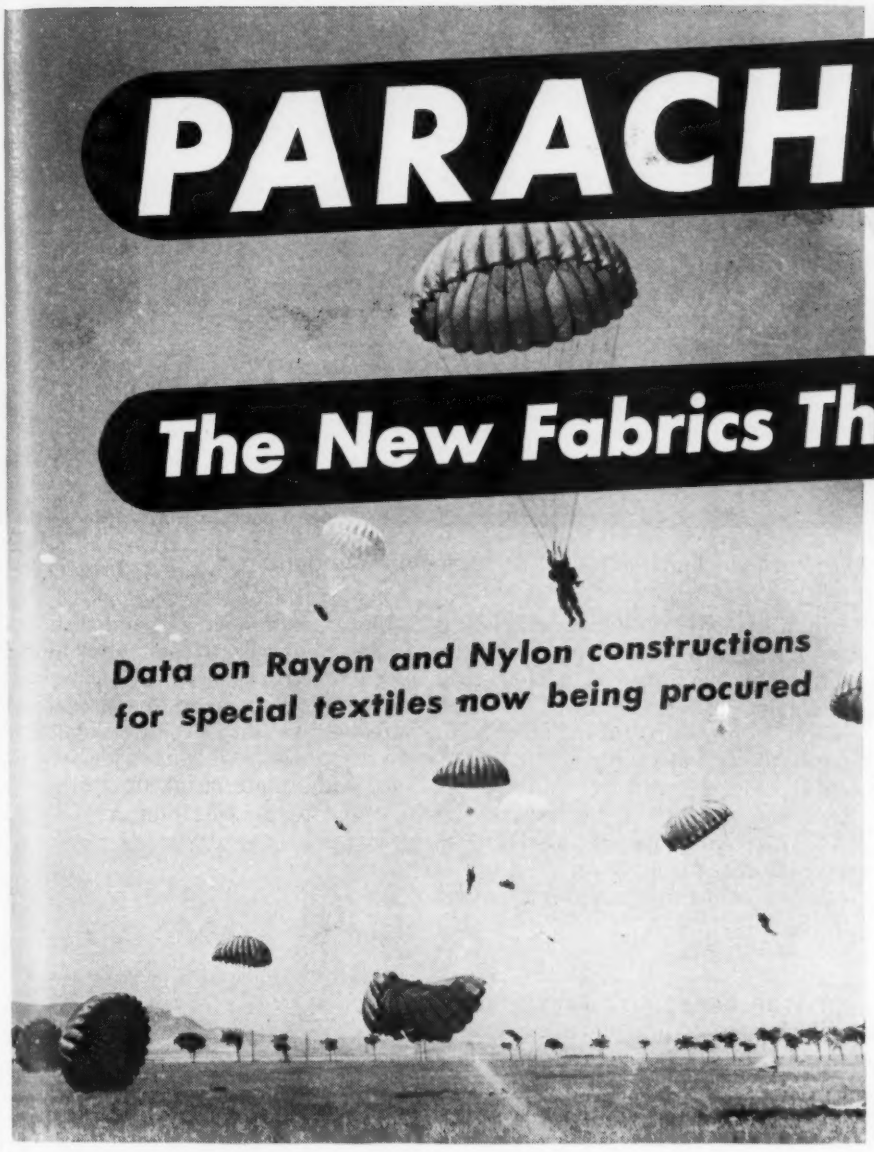
Mr. Fowle was transferred to Boston in 1937 to become TEXTILE WORLD's New England district manager, responsible primarily for the local business interests of the publication, and was returned to New York last year as publisher, with general supervision over all departments.

Directly assisting Mr. Fowle in editorial work, with greatly increased responsibilities, will be Winn W. Chase, who, as technical editor for the last six years, has directly supervised a lion's share of the publication's editorial content. Mr. Chase's connection with TEXTILE WORLD dates back to 1929, when he left a ten-year association with the Mount Hope Finishing Co., North Dighton, Mass., to become an assistant editor in New York. Previous to that, he had been an outstanding contributor of technical articles, with a wide following among this publication's readers.

Other members of the editorial staff, whose work is well known to the readers of TEXTILE WORLD, include William B. Dall and Harold E. Reed, in New York; Earle Mauldin, in Atlanta; Thomas O. Ott, Jr., in Greenville; Howard S. Knowlton, in Boston; and Gladys Montgomery, in Washington.

Details concerning Mr. Woolf's new connection will be found on page 121.

PARACHUTES and The New Fabrics They Require



Data on Rayon and Nylon constructions for special textiles now being procured

Textile mill executives are constantly on the search for new fabrics they can manufacture to assist the armed forces of this nation in their all-out struggle. This article is intended to present an over-all picture of the many different types of parachute fabrics currently being procured. Sufficient information is given on fabric constructions to permit textile manufacturers to determine which of these fabrics they are in a position to produce. More complete data are contained in the specifications, and copies of these should be secured before making up samples.

Front-cover illustration is an official U. S. Navy photograph showing delivery parachute with supplies for troops. At left is Signal Corps photo showing mass descent of paratroopers.

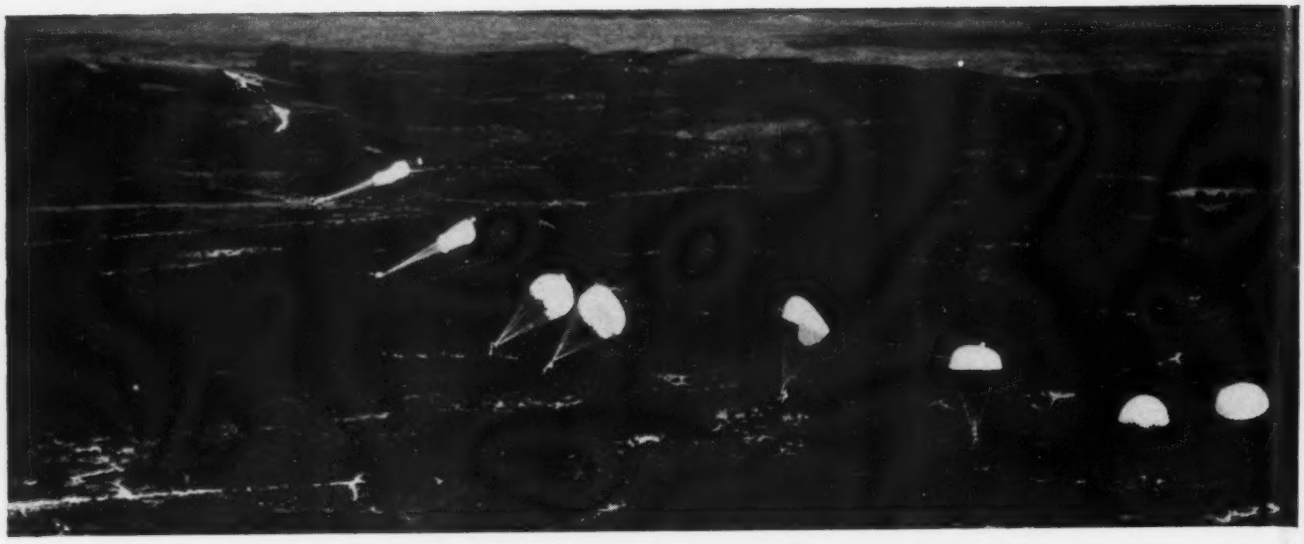
PARACHUTES ARE EMPLOYED not only for dropping paratroopers at strategic spots for battle, but for supplying them with arms, ammunition, food, medical supplies, walkie-talkie radio sets, and other items. Even 37-mm. anti-tank guns and 75-mm. howitzers weighing over a ton are being dropped by parachutes. In addition, parachutes of various types are used for dropping bombs, mines, flares, and star shells. Increasing use of parachutes for these many purposes has been accompanied by the development of a variety of special fabrics, tapes, and cords for making the chutes. Manufacture of textiles for parachutes is not static, as there is a constant search for better and better products. Textile manufacturers and producers of rayon, Nylon, and other synthetic fibers have cooperated with the Army Air Corp. and Ordnance Department and the Navy Bureau of Aeronautics and Bureau of Ordnance in the research and development work, and, to a notable degree have pooled their information on manufacturing techniques.

Initial parachute fabric specifications covering a silk cloth were issued by the Army some 22 years ago. About 1931 investigation of rayon as a suitable chute material was underway, along with a cotton fabric. However, cotton chutes proved impracticable, because of low strength and great bulk. Nylon was investigated and found to be a suitable substitute for silk, and later was adopted as the standard fabric for human chutes by all branches of the armed forces. Fortisan and Vinyon both have been considered and extensive tests are being made to determine their suitability.

Constant improvement has been made in Nylon chute fabrics since their introduction. For example, one of the most recent developments is the ripstop human chute. The fabric weighs about 1 oz. per yd. Reduction of pack thickness and weight brought about by this fabric now permits crew members of bombing planes to wear their chutes while performing their flight duties.

Chutes for utility purposes, such as delivery, cargo, flare, bomb chutes, are also recent developments. In most instances rayon is used, generally a high-tenacity yarn. Acetate rayon yarns are employed for limited purposes in such chutes and also saponified acetate rayon, or Fortisan. Nylon has been used in limited quantities for cargo chutes. Cotton was utilized in the early development of some of these chutes, but has been replaced almost entirely by rayon.

PHYSICAL PROPERTIES—Textile mill executives and fabric designers find that the manufacture of parachute fabrics involves a number of factors not ordinarily involved in production of civilian fabrics. Thus, close tolerance of cloth thickness must be maintained,



Marines taking to the air. Tremendous impact which chute fabrics must with stand is illustrated. *U. S. Marine Corps Photo*

because a variation of 0.001-in. in thickness will create an appreciable increase in chute size and the chute will not fit into the standard pack as now manufactured.

Fabric defects, especially pin-holes in the fabric and tight selvages, must be guarded against, as pointed out in an article on weaving parachute fabric which appeared in the June, 1942, issue of TEXTILE WORLD.

Strength-to-weight ratio is of paramount consideration. Known as the "strength factor," this ratio, which represents an arbitrary evaluation of the efficiency of design and construction, is obtained by dividing the average tensile strength of the warp and the filling by the weight in ounces per square yard. That is, the strength factor represents the tensile strength in pounds per inch, strip-test method, that should be obtained for every ounce in the finished "ounces per square yard weight" of fabric.

A textile designer has a wide latitude in the construction of certain chute fabrics to meet the requirements called for in the specifications. The designer may select his yarn sizes and thread count, varying them over whatever range is permitted in the specifications, to obtain fabrics with the desired permeability and strength values.

THE ARMY AIR FORCES procure by far the greatest yardage of fabric for manufacture into parachutes. Fabric, as well as webbing and cord, is purchased by the Air Forces to specification, and then allotted to parachute manufacturers.

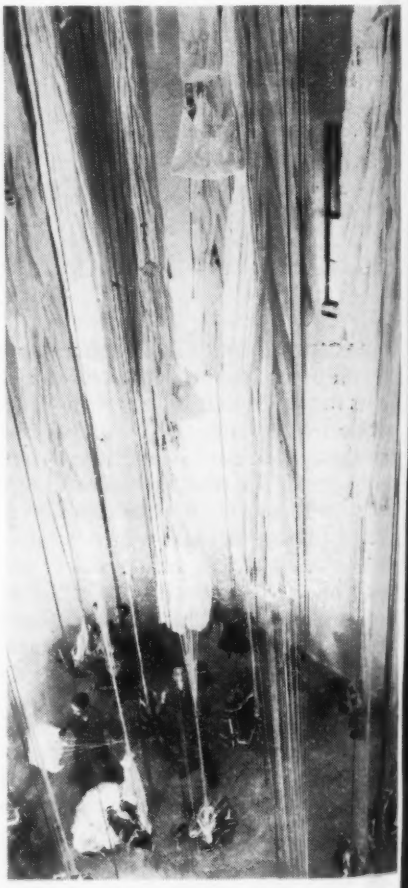
Human parachute fabric is procured under Army-Navy Specification AN-CCC-C-486 which calls for a Nylon fabric. Construction may be either a plain weave or a two-up and one-down twill weave. Width of finished cloth is not less than 36 in. and not over 37 in. Thickness shall not be greater than 0.004-in., and tensile strength must be 50 lb. for warp and for filling. Air permeability ranges from 100 to 160 cu. ft. of air per min. per sq. ft. Webbing used is covered by specification AN-W-10 and tape by AN-DDD-T-106. Cordage is made on a 32- or 36-carrier braiding machine and is covered by Specification AN-C-63. Thread is specified in AN-T-9.

RIP-STOP PARACHUTE FABRIC, made of Nylon, is of the human type and is covered by Army Air Forces Specification 16136. This fabric differs from others in that it appears as if it were divided into small squares or checks, about ¼-in. in size. The warp cords are formed by weaving two warp ends as one, and the filling by using one pick of 70-den. Nylon. A 50-den. Nylon is generally used for warp and filling yarns.

One advantage of this type of construction is that it permits a lighter, thinner fabric to be woven. Under great strain when a rip starts, it will run as far as the cord, which will usually stop the run. Specifications call for a 110×100 fabric, 36 to 37 in. wide, 1 to 1.2 oz. per sq. yd. Cloth thickness shall be 0.0025 to 0.0033 in. and ultimate fabric elongation 20 to 30% in both warp and filling directions. Porosity shall be 160±40 cu. ft. of air per min. per sq. ft. Incidentally, this type of chute fabric must be woven on a box loom because of the filling cord.

Human chute fabric, as covered in specifications mentioned previously, is being procured in camouflage pattern. However, details concerning this camouflage finish cannot be revealed at this time. It has been pointed out that after a paratrooper has landed, he can draw a camouflaged chute over himself for protective concealment.

Another human chute that has been procured by the Air Forces, but only in experimental lots, is made from saponified acetate rayon, or Fortisan, as covered by Specification AN-CCC-C-



Parachute loft in which chutes and packs must be hung in an atmosphere-controlled room to dry the moisture out of the fabric. *U. S. Air Forces Photo*

PARACHUTES AND The New Fabric They Require

491. This Fortisan fabric was developed as a substitute for Nylon, if and when sufficient Nylon is not available. A Fortisan fabric with air permeability of 80 to not more than 160 cu. ft. of air per min. per sq. ft., 36 to 37 in. wide, 1.6 oz. per sq. yd. and woven as a two-up, one-down twill, is specified. Thickness shall not be greater than 0.004-in. and elongation not less than 5% in both warp and filling.

Delivery chutes represent an outlet for rayon cloth that will run into many millions of yards. The utility of this type of chute is well illustrated when it is remembered that for over a year the Allies have kept the guerilla armies in Yugoslavia supplied with food, ammunition, and guns. Although delivery chutes were intended originally for dropping small, light loads, extensive use is now being made of them for heavy equipment. Two, three, and four chutes are sometimes attached to a single piece of equipment. Use of a number of delivery chutes in place of a single cargo chute has as its advantage the fact that only one type and size of chute has to be kept in stock at advanced supply bases.

Army Air Forces Specification 16126 covers the fabric used for delivery canopies. Generally a 300- or 275-den., medium tenacity viscose rayon yarn is used, having a breaking strength of about 2.75 g.p.d. However, high or regular tenacity yarn may be specified. Weave shall be plain or one-up, one-down, and the finished cloth shall not weigh more than 4.25 oz. per sq. yd. Elongation of not less than 15% both in warp and filling directions is specified, and porosity of 150±30 cu. ft. of air per min. per sq. ft. is required. Color and fabric width are specified in contracts.

Bomb chutes being dropped on the Dagua drome among Japanese twin-engine bomber planes in the New Guinea area. *U. S. Air Forces Photo*

DELIVERY CHUTES are constructed of fabrics in five different colors, namely, red, blue, green, yellow, and white. The colors serve to identify the content of the chute. For example, guns might be sent down in red chutes and food in white chutes. By color identification, a troop of paratroopers can assemble the equipment dropped with it in only a few minutes.

An interesting sidelight of the African campaign was that the Army found it practically impossible to salvage delivery chutes. Natives found that the gay-colored chute fabric made excellent wearing apparel.

Largest procurements of chute fabrics by the Air Forces are in Nylon for human chutes and rayon for delivery chutes. In addition, procurement has been made of rayon and of Nylon for cargo chutes.

Cargo chute fabric is being procured under four different Army Air Forces specifications, one calling for a high-tenacity fabric (16123); another, a Nylon rip-stop fabric (16133); the third, an acetate rayon high impact fabric (16144); and fourth, a Fortisan fabric (16146).

The high-tenacity fabric is a 45x45, 8-oz. cloth, with 18% elongation. The Nylon fabric is 52x52, 3.5 oz., with elongation from 25 to 35%. A 150-den. yarn is used for the Fortisan fabric.

Of considerable interest to the textile trade is Specification 16144, calling for an acetate rayon, high-impact cloth. The fabric specified must be woven on a dobby loom and is so designed as to obtain an elongation of not less than 45% in either warp or filling direction. Cloth weight is 4.5 oz. per sq. yd., and porosity 120±40 cu. ft. of air per min. per sq. ft. With this fabric, practically all elongation is obtained through the weave. When a sudden impact is applied to the fabric, as encountered when a chute opens, the slippage of the yarns prevents breakage.

High elongation, either in a yarn or in a weave, is very desirable under sudden impact, because the elongation absorbs most of the strain, whereas a yarn with very little elongation would break.

Rayon tape, both in high, semi-high and regular tenacity for use in cargo chutes is covered in Army Air Forces Specification 16125-A. Saponified acetate, or Fortisan, cord is covered in Army Air Forces Specification 16141.

Miscellaneous chute fabrics being procured in small quantities are covered in Air Forces Specifications 16138 and 16141. Specified as a target parachute, the saponified acetate, or Fortisan, fabric (16138) is woven of 30-den. yarn. Fabric construction specified is 110×110, 0.9 oz. per sq. yd., thickness 0.002 in., elongation, not less than 6% and air porosity of 240±60 cu. ft. of air per min. per sq. ft. This chute, it has been stated, is used for flares.

Fabric for light-weight parachutes is covered in Specification 16141. This fabric is of acetate rayon and is woven in a rip-stop weave; a box loom is necessary for weaving it. Construction specified is: 80×70, 36 to 37 in. wide, 2.5 oz. per sq. yd., elongation not less than 15%, and air porosity of 100 to 200 cu. ft. of air per min. per sq. ft.

The light-weight chutes are used for numerous purposes where the material dropped is of fairly light weight. An interesting application of these chutes is for dropping photo-film from an airplane, permitting a plane to continue on its flight and take additional photographs while those dropped to the ground are being developed. Chutes for this purpose generally have colored segments alternating with white.

ARMY ORDNANCE procures large quantities of rayon fabrics for fabrication into flare chutes and bomb chutes, commonly known as fragmentation chutes.

Flare chutes, dropped by bombing planes to illuminate their targets, require large yardage of 50-den. fabric and also Fiberglas fabric for use as shields. This glass-fabric is employed because it withstands the tremendous heat of the magnesium flares and prevents the 1,000,000-candle-power light from blinding the pilot overhead.

Army Ordnance Specification AXS-727 specifies a 50-den. 24-fil., 6 t.p.i.,

high-tenacity rayon yarn or any other viscose rayon yarn that will produce a cloth with like characteristics for use in flare cloth. Plain weave, warp and filling count 86 to 100 threads per inch, 1.35 oz. per sq. yd., and porosity of 400 to 500 cu. ft. of air per min. per sq. ft. are specified. Cordage used for these chutes are not less than 16-carrier construction and are covered in Specification AXS-728. Cords are treated for moisture repellency.

Fragmentation chutes were developed to drop the 23-lb. fragmentation bombs. These bombs are intended to explode above the ground and spread shrapnel over a wide area. The bombs are dropped by low-flying planes, generally under 75-ft. altitude, and the parachute permits the airplane to be out of the area when the explosion occurs. Cloth for these chutes is covered in Army Ordnance Specification AXS-701. Regular viscose rayon in 275 or 300 den., 3 t.p.i., is used for the fabric. Construction is as follows: warp count, 47 to 57 ends per in.; filling count, 42 to 52 picks per in.; 28.5 in. wide; 4 oz. per sq. yd.; and woven in plain weave. Air porosity is 150±30 cu. ft. of air per min. per sq. ft. Cordage for these chutes is made on 16 carrier machines or those of greater capacity and treated for water repellency. Specification AXS-707 covers this cordage.

NAVY AIRCRAFT FACTORY, Navy Yard Philadelphia, procures human chute fabric for the Navy. All fabrics procured are the same as those used by the Army and covered by AN (Army-Navy) specifications. Nylon fabric, as covered by Specification AN-CCC-C-486, constitutes the major procurements. Webbing covered by Specification AN-W-10, and tape covered by AN-DDD-T-106 are also purchased.

Whereas the Army uses a parachute pack made from untreated canvas, the Navy uses canvas that has been processed or treated for resistance to moisture, as covered by Specification AN-CCC-F-56.

Practically all naval flying is over water; and moisture in webbing, shroud lines, and in the parachute pack tends to reduce the strength of these fabrics. Chutes and packs must be opened, dryed, and repacked at frequent intervals, usually once every 30 days. Cotton webbing, with slight modification is procured under Specification AN-JJ-W-151.

NAVY BUREAU OF ORDNANCE procures cargo, flare, and bomb chute fabrics. Flare chute fabrics have been procured of 30-den. Fortisan and also of cuprammonium rayon. A special flare chute has been developed using a 30-den. warp and a 35-den. filling, both yarns of cuprammonium.

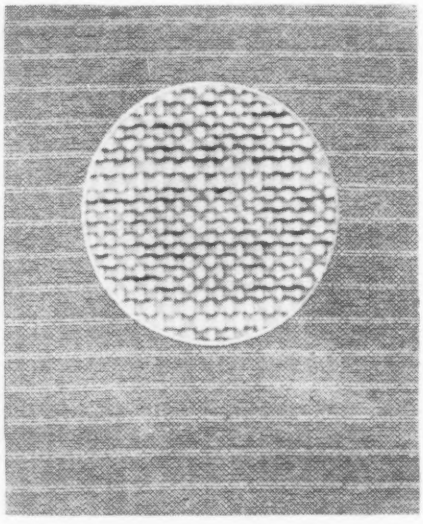


Fig. 2. Rip-stop acetate fabric for light-weight chutes. Celanese Corp. of America

A light-weight cargo chute fabric made of 50-den. yarn is covered in Navy Specification C-122. It has been stated that some of the mine chutes have been employed for cargo purposes.

Mine chute fabric is covered in Navy specification OS-1302, in either a high- or medium-tenacity rayon and in a regular rayon. This fabric is dyed a light sea-green so as to harmonize with the water.

Development of the mine chute was aided unknowingly by the Germans, so it has been reported. Our first mine chutes were of cotton and were not very satisfactory. A German chute used on a magnetic mine was fished-out of the water in the English Channel and, when analyzed, proved to be made of rayon. That offered the clue to the development of our present bomb chute.

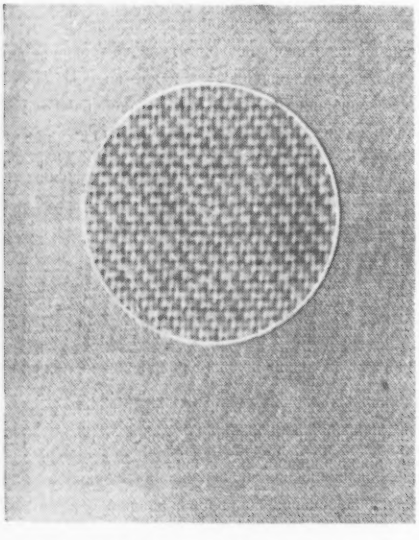


Fig. 1. Nylon parachute fabric for human chutes.

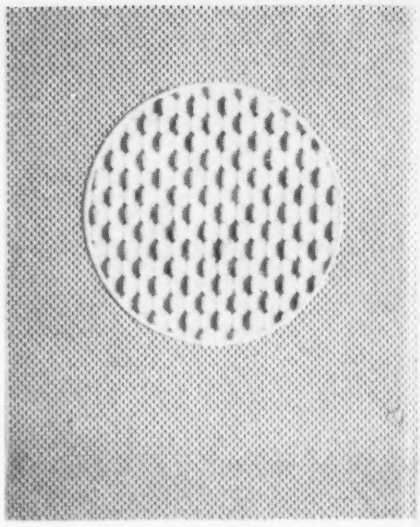


Fig. 3. Rayon cloth for fragmentation chutes. American Viscose Corp.

Mining is accomplished at night and from a very low altitude, usually under foggy atmospheric conditions. The object is to drop the mine, weighing about 1,200 lb. as rapidly as possible and unseen. The parachute must then automatically detach itself and float away, leaving no indication that a mine has been planted; hence, the sea-green color acts as camouflage.

Another Naval use of parachutes is for star shells, their purpose being to blind the enemy as they descend. Information concerning these shells is, at present, restricted.

Textile fabrics are not the only materials used in fabricating canopies. For example, paper has been used to a limited extent. Parachute signal flares used by flyers when they are forced down over water have been responsible for many rescues.

The Civil Air Patrol, that group of private pilots who have been patrolling our coast lines and our timber tracks, have made use of paper parachutes for lowering small packages of supplies weighing not more than 10 lb. These supplies have assisted many a fire-fighter and Forest Ranger.

Specifications for Army Air Forces fabrics may be obtained from Army Air Forces, Material Command, Wright Field, Dayton, Ohio; Ordnance specifications from Office, Chief of Ordnance, War Dept., Washington, D. C.; Army-Navy specifications for human chutes from Manager, Naval Aircraft Factory, Navy Yard, Philadelphia; and Navy Ordnance specifications from Navy Bureau of Ordnance, Washington, D. C.

Role of Textiles in Rehabilitation

Expected to take only fractional part of output, with no expansion expected

By GLADYS MONTGOMERY

WASHINGTON, D. C.

ON THE BASIS of a comprehensive analysis of domestic and world-wide clothing needs created by war shortages and restrictions, Government officials have now reached the definite conclusion that the textile industry must gird itself for maximum production well into the postwar period. Authority for this is Frank L. Walton, Director of WPB's Textile Division. Concern now in Washington is principally with the gearing up of the industry to do the job and overcome the lag in production that has developed during the summer months.

"Whether it is cotton, wool, or rayon yarns and fabrics, we need all we can produce and we must find ways to make more," said Mr. Walton. In his opinion, mills can plan on capacity production, not only during the war but long after the war is over.

The role of the textile industry in the broad rehabilitation program of the United Nations will be substantial, but nevertheless it will be measured only fractionally in terms of the dollar volume and yardage production of the industry in 1943. No over-all expansion and no sharp production peak seems likely in connection with this country's textile contribution to the program.

This much is now generally assumed, although the dimensions of the program and the manner of its administration will not be known until the snarl that has developed over the setup of the rehabilitation agency has been ironed out. According to present plans, the United States Office of Foreign Relief and Rehabilitation Organization will be absorbed by the United Nations Relief and Rehabilitation Administration which will probably be headed by former New York Governor Herbert H. Lehman. If the proposed setup which has been submitted to United Nations is accepted, it is planned to have the first meeting of UNRRA's Council early in November at an undesignated place outside Washington. Congress is definitely interested in the machinery for handling the program because of its international implications, and it will control U. S. participation through its approval of specific appropriations.

While the ultimate pattern is not yet delineated, certain observations of interest to the textile industry can now be made. These observations are based in part on the thinking of officials and in part on the needs of the program as they see it. Textile fabrics, mostly cotton cloth and finished garments, come next to medicine and food, and the emphasis on clothing will continue after the other two needs have been largely cared for. The textile industry should not regard exports for rehabilitation as anything but temporary. As viewed here, this program, which will go into the postwar period, does not hold any promise from the standpoint of creating future permanent markets for our cottons, woolens or rayons. The smaller nations which are demanding a greater voice in the administration of the program are vitally interested in the restoration of industries. So they will place as much, if not more emphasis on textile machinery for their own mills as they will on yardage to meet temporary needs of the population.

NO MATTER HOW LARGE the United States over-all budget for rehabilitation may be, textile officials take the view that whatever textiles the program calls for must be made to come out of the capacity program that the industry is carrying. Realistically, they do not in any sense envision commitments that would call for too heavy a load on industry, nor do they feel that such a load could be imposed with present demands what they are and in view of increasing labor and facilities difficulties. Hence the significance to the textile industry of a recent statement by Frank Walton in which he again, by implication at least, warned against overemphasis on textile exports. Yes, conceded Mr. Walton, more is being exported and more will be exported during the last quarter of this year, but there is no likelihood that the exports for all of 1943 will surpass the estimate of 5% to 6% of U. S. production.

The official thinking is definitely to the effect that the program is one that the industry must "carry in its stride," taking a bite at a time out of current production as conditions warrant. Of course, there is no doubt that foreign procurements would be stepped up if cancellation or modification of military orders permitted. But Army's recent announcement that the order deferring deliveries of cotton goods for the last quarter of the year had been rescinded and that new military procurements of cotton are in the offing would indicate that there is no immediate place for high relief figures.

There is agreement on one other point of the program, that is the type and character of textiles and textile fabrics. They will be overwhelmingly cotton and cotton mixtures—inexpensive but good-wearing. Most of the clothing will probably be made according to Government specifications. There will be an emphasis on simplified models, capable of a variety of adaptions. Rejects by the military services, including osnaburg, canvas, etc., will find a useful and ready outlet through the rehabilitation stockpile.

Many vital phases of Government-industry relationship, including such issues as the renegotiation of war contracts, provision for the liquidation of claims after the cancellation of war orders, the provision of capital reserves for conversion from war to peace production, and the disposal of surplus goods that the military services will not take and for which there is no ready market, are being currently studied by Congress and by executive agencies of the Government. The textile industry with its enormous volume of military contracts will be definitely affected by the agreements arrived at, whether these agreements take the form of legislation or commitments by Government agencies.

At this writing, the powerful Ways and Means Committee of the House has completed extensive hearings on the issue as to whether or not the law requiring renegotiation should be repealed. It is not possible to determine now whether the Ways and Means Committee will reach any different conclusion from that arrived at by the

(Continued on page 136)

PART TWO

Place and Functions of the Designer

By THOMAS O. OTT, Jr.
Southern Editor, TEXTILE WORLD

The first article in this series on the subject of Styling and Designing Consumer Fabrics for Post-War Markets (TEXTILE WORLD, September, 1943) outlined the changes needed in manufacturing and selling organizations before a company enters the consumer fabric field and then discussed the place and functions of the stylist. Subsequent articles will deal with the designing of specific types of fabrics.

A FABRIC DESIGNER is a person skilled in the construction of various patterns or designs on paper and the transfer of these designs to suitable fabric constructions by special techniques to meet the requirements of the stylist or market. Designer's techniques are acquired by study in art institutes, textile schools, and by actual experience in design work.

Designers often specialize to a considerable degree, and at least three distinct types of designers are found in the textile business today. The first is the artistically minded type who creates new patterns or designs in colors on paper, and who has a basic understanding of the techniques of point-paper work. The second type is technically minded, and has a basic understanding of the principles of art and design, but specializes in the mechanical drafting and layout of the patterns on point paper, and in the creation of fabric constructions from combinations of fibers, colors, twists, yarn types, and finishes available. The third type is the all-round designer with skill and experience in both the artistic and technical phases of designing. The first type of designer-specialist often acts as an understudy to the stylist; the second type, because of his knowledge of yarn and fabric manufacture, supplements the stylist; the third type, with his all-round experience, can be of even greater help to the stylist.

The designer can be located either at the mill or at the sales office. The advantages and disadvantages of each of these arrangements were considered in the first article of this series. If the designer is located at the sales office, he and the stylist must draw on their own experiences to make the initial developments; and the designer should work up complete fabric and yarn specifications, sketches, draw-in drafts, and chain drafts so that the stylist can submit them to the mill for approval. If the designer is located at the mill, he can consult with the operating executives on proposed fabrics without spending too much time on paper work.

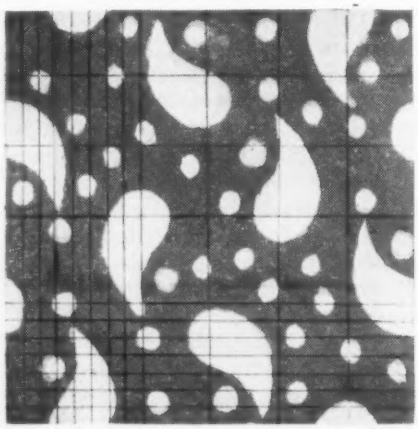


Fig. 1. Sketches of design ideas help in making decisions.

The designer should have enough practical experience to enable him to confer with the superintendents and overseers with the idea of ascertaining their ideas on the manufacture of a fabric. By having complete freedom to confer with department heads for information or suggestions bearing on manufacture of a fabric, the designer can eliminate many manufacturing difficulties. It is wise for him to be reserved and cautious about claims made for any new fabric to overseers as they usually are production-minded, and, therefore, are inclined to resist changes entailed by the introduction of a product that is radically different from regular production. A good selling job here on the part of the designer can do much to insure the success of a fabric when it is put into production.

In order to visualize difficulties that

might be encountered, the designer should develop the paper work on each fabric as quickly as possible. For highly styled fabrics, he generally makes up ink or water color sketches of one or more repeats of pattern to submit to the stylist, who then suggests changes and improvements in pattern or color. Such a sketch is shown in Fig. 1. Many changes can be made on the sketch without going to the expense of making an actual sample. The designer then takes the revised design or sketch, and transfers it to design or point paper.

TO MAKE DESIGNING EASIER, commercial printers carry a range of design paper with ruling so made as to give warp and filling spaces in the same ratio as warp ends are to filling picks in standard fabric constructions. Besides spaces between vertical rulings representing warp ends and spaces between horizontal rulings filling picks there are heavy vertical lines on design paper ruled every 8, 12, or 16 spaces to serve as a guide to the designer and card cutter. (Many weaves repeat or 8, 12 or 16 ends or multiples thereof, and standard jacquard cards are cut 8, 12, or 16 spaces at a time to correspond to hooks in the short row of the jacquard machine.) Heavy horizontal lines are ruled off the same distance apart as the heavy vertical lines, which make it easier to determine the proportion of filling picks to warp ends.

On some types of design paper used for jacquards with 8 hooks in a short row, such as a 16x8 paper, an additional heavy line is ruled every 8 spaces to guide the designer and card cutter. The numbers of horizontal and vertical spaces between heavy and light lines in one heavy square are expressed in proportions, such as 8x8 or 16x4.

A fabric of 32x32 construction for a jacquard with 8 hooks in the short row requires 8x8 point paper, and a 64x32 construction for a jacquard with 16 hooks in the short row requires a 16x8 point paper to prevent distortion of the design (see Fig. 2). In addition, the large squares formed by the heavy lines are helpful to the designer when transferring the outline of the ink or water color sketch to the point paper. To accomplish the transfer the designer rules the face of the sketch as shown partially in Fig. 1, vertically and horizontally, with the same number of heavy lines as fall in the width and length of the repeat of pattern as checked off on the point paper. Next, the designer copies the partial outline of the figures from the squares in the ruled sketch into the

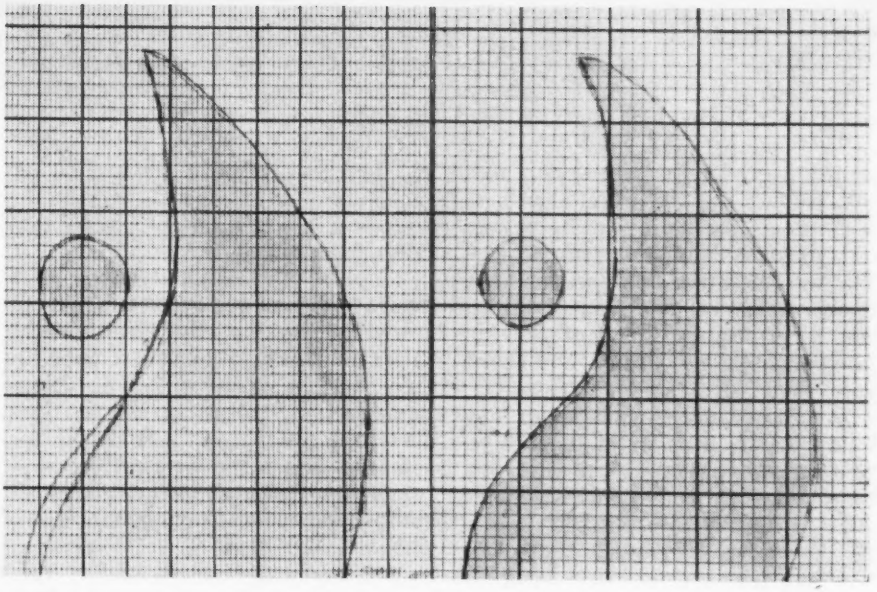
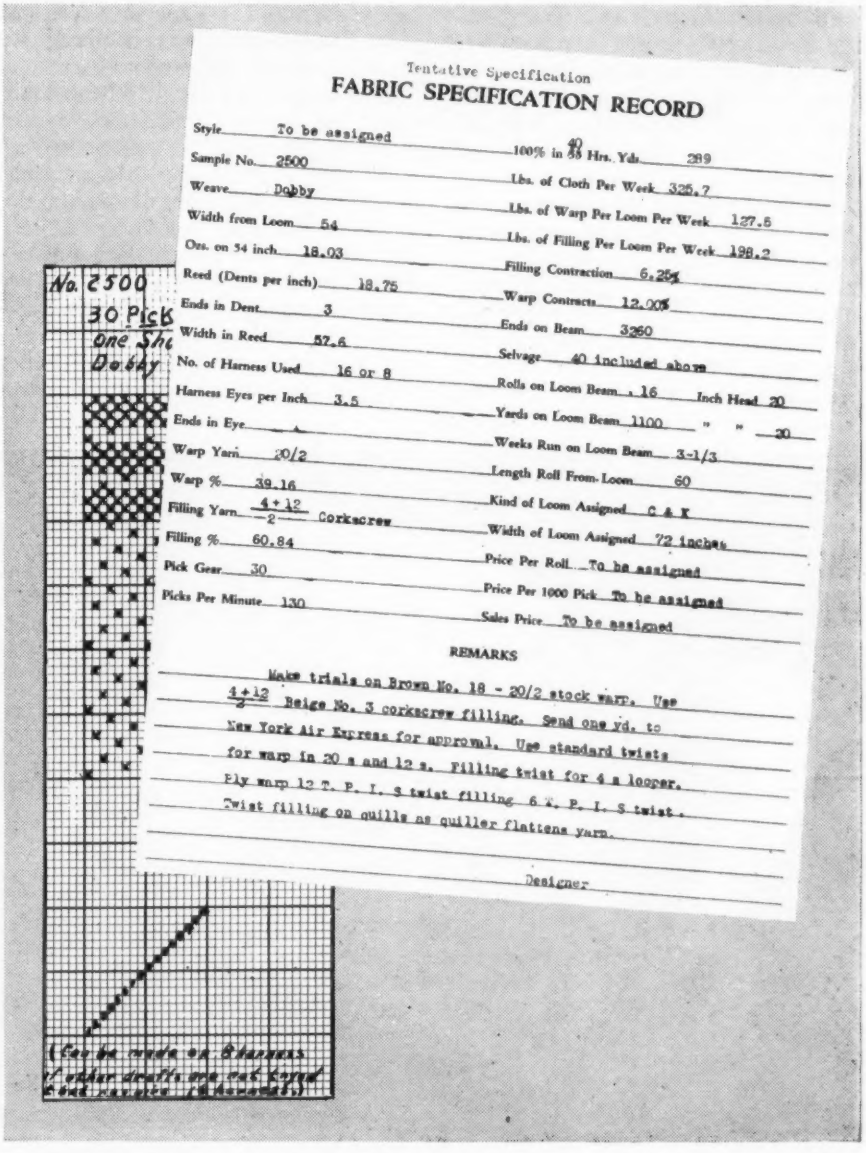


Fig. 2. Point paper of the correct square prevents distortion of pattern.



Tentative Specification

FABRIC SPECIFICATION RECORD

Style: To be assigned — 100% in 40/58 Hrs. Yds. 289
Sample No. 2500 — Lbs. of Cloth Per Week 325.7
Weave Dobby — Lbs. of Warp Per Loom Per Week 127.5
Width from Loom 54 — Lbs. of Filling Per Loom Per Week 198.2
Ozs. on 54 inch 18.03 — Filling Contraction 6.25%
Reed (Dents per inch) 18.75 — Warp Contracts 12.00%
Ends in Dent 3 — Ends on Beam 3260
Width in Reed 57.6 — Selvage 40 included above
No. of Harness Used 16 or 8 — Rolls on Loom Beam 16 Inch Head 20
Harness Eyes per Inch 3.5 — Yards on Loom Beam 1100 " " 20
Ends in Eye — Weeks Run on Loom Beam 3-1/3
Warp Yarn 20/2 — Length Roll From Loom 60
Warp % 39.16 — Kind of Loom Assigned C & K
Filling Yarn 4+12/2 Corkscrew — Width of Loom Assigned 72 inches
Filling % 60.84 — Price Per Roll To be assigned
Pick Gear 30 — Price Per 1000 Pick To be assigned
Picks Per Minute 130 — Sales Price To be assigned

REMARKS

Make trials on Brown No. 18 - 20/2 stock warp. Use 4+12/2 Beige No. 3 corkscrew filling. Send one yd. to New York Air Express for approval. Use standard twists for warp in 20 s and 12 s. Filling twist for 4 s looper. Ply warp 12 T. P. I. S twist filling 6 T. P. I. S twist. Twist filling on quills as quiller flattens yarn.

Designer

Fig. 3. Tentative specifications of the fabric should be furnished the manufacturing and cost department.

corresponding large squares on the point paper.

All textile designs are made to repeat both warp wise and filling wise on a definite number of ends and picks. Some patterns repeat only once in the width of the fabric, but most fabrics have two or more repeats of patterns in the cloth width. Besides artistic considerations, repeats of pattern warp wise and filling wise depend upon mechanical limitations, such as the standard dimensions of the finished articles into which the fabric goes.

For jacquard designs, the designer usually sketches in the full repeat of the pattern warp wise and filling wise in pencil on the point paper, and then blocks in the weaves in color. Often, he uses one color for the warp and a contrasting color for the filling, and shows binding points in the appropriate warp or filling color. Usually he considers the paper as the warp or the filling. An efficient designer sketches in the main outline of the design on point paper, and then turns the blocking-in of the design over to an assistant, who blocks in the weaves to guide the card cutter in his work.

Much blocking-in of weaves can be eliminated by having the card cutter work from written instructions with only enough of the weaves showing to guide his work. To make it easier for the cardcutters to see the rulings, designers use transparent ink or water colors for painting in design elements on point paper. In some cases, the designers sketch in figures out of proportion when the correct paper is not on hand for a desired construction of fabric.

Dobby designs are generally so simple that weaves can be checked off in pencil, and often only a chain draft, and draw-in draft are made, and the dobby design is omitted.

TENTATIVE SPECIFICATIONS should be made out by the designer for each fabric on a standard form developed to suit the individual mill. The more complete he makes these specifications, the easier it is for mill men to visualize, and figure on the cost and production problems in the mill. One form in general use in mills is shown in Fig. 3. Copies of each specification should be furnished the stylist, the mill, and the cost department by the designer. The cost department can then furnish estimates to the stylist before a sample is made so a revision of the construction can be made to get the price in the proper bracket.

The designer should attach working drafts for sample production of the fabric to the specification sent to the mill, Fig. 3. All other information needed for manufacture of the sample should be included in a letter requesting the sample. These suggestions should cover the size of the sample desired, trials of stock yarn in sample, etc.

When the designer receives the head-end from the mill, he checks it carefully against his instructions and notes on all errors which should be corrected. Then he confers with the stylist, and they decide on changes or improvements. If the first head-end is acceptable—as it seldom is—the stylist instructs the mill to weave out the sample yardage, and to make it up for salesmen's samples. Should changes be necessary, the mill must weave new head-ends until a sample is approved by the stylist.

The designer should carefully preserve all the detail paper work, and correspondence with the mill in a standard letter-size folder. Many systems are in use, but one simple way is to assign sample code numbers to each fabric range and pattern, and file all data pertaining thereto in a folder to prevent the loss of vital information (see Fig. 4). Such a work file can be used as a master sample file by carefully preserving a bound and marked swatch of each color of the fabric range in the same folder.

THE SALES OFFICE AND THE MILL should each develop a master file on every new fabric put into production, and check each file against an approved sample. For ready reference, all correspondence should be kept in the folder pertaining to a particular sample. Other pertinent data can be recorded on this folder to suit the mill and system developed. Some mills build up a master file by preserving for reference a large swatch of the first yard of production that has been checked and approved by the stylist. This master file can be referred to in determining responsibility for changes or variations, and is useful also in settling disputes.

A sample from each production lot can be filed with the master sample, along with the lot number and date of entry into production. In some mills, the size and frequency of orders and demands of the trade as to match may not require this precaution. It is advisable to set up the master file as complete as possible from the start and later discontinue any practices not required, as disputes can be more easily settled with complete reference files.

Swatch books of standard 3x3-in. swatches of all samples made, whether in production or not, can be helpful to the designer and stylist when they begin working out a new line. The swatch books afford an excellent way to refresh the memory on the many trials and developments that have gone before. They are great time-savers, since the bulky work files need not be looked over to see what has been done previously.

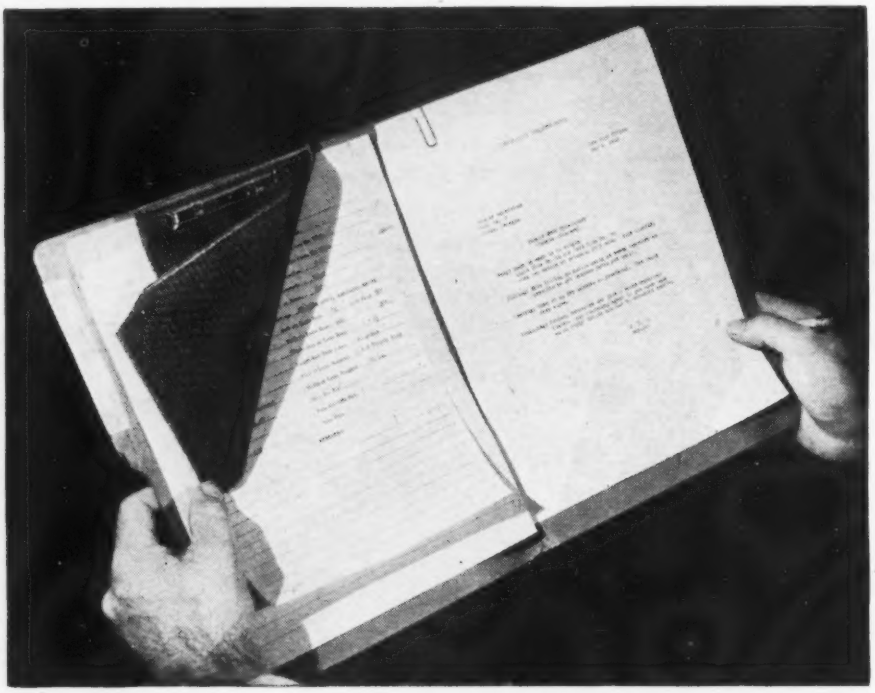


Fig. 4. Master sample files can be developed, using standard file folders. Care must be exercised to preserve all data.

Foresees Less Goods for Civilians

NACM president finds future obscure —Morrison optimistic on Washington

"IF MILITARY NEEDS for 1944 turn out to be as large as in 1942 and 1943," declared Russell T. Fisher, president of the NACM at its annual meeting in Boston on Oct. 1, "then adequate supplies for the civilian population will become a serious problem. And the immediate outlook seems to be that the war requirements will continue to take cotton goods at about the same rate as in 1942."

Against this maintained demand for cottons, which is a change of front since Washington announcements late in August that military demands were to be relaxed, is the declining production of cotton goods.

"According to WPB," explained Mr. Fisher in his address, "production of cotton goods for the country as a whole reached its peak in the first quarter of 1943, and has receded gradually ever since. In our section of the country the peak was reached in the first quarter of 1942. There are several reasons for the declining production of cotton goods, the most important one being the shortage of manpower. There are other contributing factors, such as the lack of price incentive, renegotiation of military contracts, and the growing difficulty of keeping machinery operating efficiently, due to the wearing out of the machinery itself and the poor quality of machine fixing."

"The more distant outlook for the industry," he said, "is less clear than the immediate future, but post-war planning is a subject receiving more and more attention. Your board of directors this morning authorized the appointment of a small Post-War Planning Committee for this association. Successful post-war planning must be visualized on an extremely broad basis, since there are many factors that must remain uncertainties.

"OUR POST-WAR picture will be complicated by conditions peculiar to our own industry. A staggering amount of textiles will be surplus in the hands of the Government. What will be the policy of the Government in liquidating this surplus? If these stocks are used largely for supplying Lend-Lease requirements, they will then not be a market factor to be reckoned with.

"There will undoubtedly be a large accumulated demand for goods that were not available in desired quantities during the war, but whether there will be sufficient purchasing power to satisfy these demands will depend in part on how quickly the durable goods industries can change over and get their men back on an earning basis.

"While our industry did not find it too difficult to convert from peace-time to war-time production, the reverse may be more of a problem. The original Selective Service Act requires that draftees be given employment when they return, if not at their old jobs then at nearly equivalent occupations. How are you going to take care of this problem, particularly in view of the fact that price ceilings allow only a limited profit, and renegotiation prevents the setting up of reserves? How are you going to take care of the people who will obviously have to be dropped, even though they served you well during the war? If the law requires separation pay, where are you going to get the money?

"Do you have a survey of your mill that will tell you promptly what machinery must be replaced and what can be reconditioned? How quickly can needed new machinery be obtained? Have you thought about the problem of retraining your help to go back to the quality standards you were forced off by the levelling effect of ceiling prices? After the last war the industry failed to adjust production downward to demand. Will we do any better this time? On an industry-wide three-shift basis there are probably some 8,000,000 spindles more than will be needed. Will the industry repeat the painful experience of lingering liquidation, or will a large part of it cut running time to two shifts?

"Fundamental to the continuance of the northern industry will be the equalization of labor costs. This section of the industry cannot continue to operate with labor costs materially higher than those of its competitors in other sections of the United States.

"Our mills must be ready to adapt and exploit new fibers and new fabrics. In addition to much improved rayons and other synthetic fibers that were available before the war, there will be a whole new field of synthetic fibers offering possibilities to alert management."

THE MEETING was curtailed to a short business session and luncheon. The luncheon speaker was Fred W. Morrison, who has represented the industry in Washington for some years. He indicated hopefulness that some of the tough spots in bureaucratic control of industry had been passed and that there is something new and something pretty good in their personnel and spirit.

Turning to the outlook, Mr. Morrison declared, "Our attitude is colored by what we think about the war's end, but many still believe there is a big job to be done and a long road to be traveled." He expects legislation regarding termination of contracts to be passed in the near future. He touched on the on-coming tax structure with its increase in corporation taxes, and on the proposed increase in individual income taxes which may meet a proposal of a national sales tax as an alternative.

In post-war planning he advised that planning must look forward and be based on the principle that new conditions demand new remedies. "You are not going back to the good old days," he said. "You must remember that 1929 is 100 years ago."

Horace G. Woodbury, fine goods representative on WPB, also spoke and indicated that a brief peak in demand for combed yarn goods might bring allocation of orders for a limited time but that this would be a temporary and limited expedient.

Russell T. Fisher was re-elected president and C. F. Broughton and Percy S. Howe, Jr., were named vice-presidents. Directors elected were: Amory Coolidge, Pepperell Mfg. Co.; Andrew W. Macy, Nashawena Mills; H. S. Newcombe, Berkshire Fine Spinning Associates; Samuel Powel, Lonsdale Co.; George E. Spofford, five Maine Mills. Henry W. Nichols, who built up the Bradford-Durfee Textile School, was elected an honorary member of the association.

Post-War Planning Marches On

Committees have employment as prime object

PREPAREDNESS is the guiding philosophy of the current activity in post-war planning. The textile industry is getting under way in this program. Leading associations have already appointed committees to handle the matter, and many others have such appointments on their agenda for early action as this is being written. Textile executives, either as representatives of their industry or simply as protagonists for industry in general, have joined with national, cross-sectional committees which are working to foresee and solve in advance as many of the post-war problems as can be defined at the moment.

A few executives feel that, for the present, it is most inopportune to stress post-war plans, while the war may still have months or years to run. Such plans, they fear, may bring disappointment because unattainable for a long time, and may dull the drive on the immediate problems of production and manpower which must be successfully solved if the war is to be won. Most of the planning groups recognize that actual action may have to be held in abeyance for months, but feel that it is not too early to explore the difficulties which lie ahead and prepare for cooperative action such as will be essential if the problems are to be licked, the post-war industrial world securely founded, and the desirable features of the American economy preserved and expanded.

Basically there is one prime purpose in all this planning—the maintenance of jobs, with pay properly related to the cost of living, for all citizens able and willing to hold them. Absorption into other employment of the men and women released from special services related to the war, and avoidance of post-war inflation and boom, as well as avoidance of post-war depression, are high ranking objectives. To gain these ends every function of business and industry will be enlisted.

OF ASSISTANCE to every textile man who now turns his thoughts to his post-war problems are several organizations cutting across all industries. Most important of these is the Committee for Economic Development, which is under the chairmanship of Paul Hoffman, president of Studebaker Corp., and counts some leading textile executives among its members. It is interested primarily in the over-all problem of providing jobs for civilians in private industry after hostilities cease. It has two main divisions—research and field development. The former will initiate studies into principles which both Government and industry should employ to foster maximum industrial employment; the latter, with regional chairmen for each Federal Reserve District, will work as a channel for dissemination of information from and to individual firms, associations, and communities.

In the forefront of the textile effort is the work done by the Cotton-Textile Institute. Other associations have gone a long way along the road, but many others are only just beginning. The C.T.I. agenda on postwar can be useful not only to its own field but as a guide to other branches of the industry which are exploring or about to explore the same ground.

In the words of Dr. C. T. Murchison, president of the institute, the cotton-textile industry "from its present high and exciting position faces the period of post-war adjustment with genuine concern." There is no disposition to take the attitude "let's cross the bridge when we come to it."

"INDUSTRY THINKING" continued Dr. Murchison, "has already reached the point where cooperative effort is being designed for the purpose of meeting with the highest degree of intelligence the ultimate shock which we know is coming. In our preliminary visualization of the tasks to be accomplished and before we can hope to deploy on the plateau of economic stabilization after the war, we were tremendously surprised to discover the extent of necessary dependence on Government policy and practices. These latter are of the utmost importance and so placed that the timing of their final disposition is prerequisite to the effective use of the industry's own private plans and efforts."

The first of these Governmental factors is the timeliness and orderliness in the termination of Government contracts, priorities, allocations, freezing regulations and other devices of control. Next is the disposition of the huge supplies doubtless to be left on the Government's hands at the end of the war and the settlement of Government's commitments to the industry. It will also be necessary to know more of the lend-lease and relief program requirements which Dr. Murchison estimates might total 40% of a year's textile production at the present rate for immediate and urgent needs alone. The Government's attitude toward importation of competing fibers, and the general problem of substantial tariff protection to the industry at large are further points at which

TEXTILE POST-WA

AMONG the textile associations and groups which have appointed post-war planning committees are the following, listed alphabetically, with the personnel of each committee given. Other associations are about to appoint such committees.

ALABAMA COTTON MANUFACTURERS ASSOCIATION, *Montgomery, Ala.*—J. Craig Smith, Avondale Mills; George S. Elliott, Dallas Mfg. Co.; Paul A. Redmond, Alabama Mills; Joe L. Lanier, West Point Mfg. Co.; and J. T. Phillips, Buck Creek Cotton Mills.

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK, *New York*— Gerrish H. Milliken, Deering, Milliken & Co.; chairman of industry committe Saul F. Dribben, Cone Export & Comm sion Co., vice-chairman; Harry L. Baile Magruder Dent, W. J. Gallon, Leave McCampbell and F. A. Williams.

COTTON-TEXTILE INSTITUTE, *New Y*—Herman Cone of Proximity Mfg. Co., vice-president of the Institute, chairma Robert Amory, Nashua Mfg. Co.; C. Broughton, Wamsutta Mills; Hugh Comer, Avondale Mills; Stuart W. Cram Cramerton Mills; Norman Elsas, Fulton B & Cotton Mills; Robert E. Henry, Vic Monaghan Co.; Lawrence Richmond, Hig land Mills; Charles A. Sweet, Sherm Mfg. Co.; Sam Swint, Graniteville C William C. Planz, Textile Export Assoc tion.

LANNING COMMITTEES

NSTITUTE OF CARPET MANUFACURERS OF AMERICA, *New York*—J. J. elaney of Bigelow Sanford Carpet Co., eneral chairman of the new activities of everal committees concerned with various spects of post-war marketing for the industry.

EYSTONE HOSIERY MANUFACTURERS, NC., *Reading, Pa.*—John H. Guenther, eading Maid Hosiery Mills; C. M. Leinnger, Industrial Hosiery Mills; W. G. Kuerten, Birdsboro Knitting Mills; T. E. Gantz, emple Full-Fashioned Hosiery Mills; has. A. Scott, Howard Hosiery Co.; W. A. ollier, Busy Bee Hosiery Co.; W. A. onklin, Reading Full-Fashioned Hosiery ills, John C. Evans, president of Keystone osiery Manufacturers, Inc., ex officio.

NATIONAL ASSOCIATION OF COTTON MANUFACTURERS, *Boston* — Committee authorized and about to be appointed.

NATIONAL SAFETY COUNCIL, TEXTILE SECTION, *Oella, Md.*—William A. Dickey, Jr., Harry S. Dickey and Louis Bondy, of W. J. Dickey & Sons.

NON-ELASTIC NARROW FABRICS DIVISION OF COTTON-TEXTILE INSTITUTE, *New York*—J. W. Burnett, Southern Weaving Co.; John E. Fite, Jr., Krout & Fite Mfg. Co.; Jos. M. Greene, Jr., Hamilton Web Co.; Charles Hofman, Jas. Wilson Sons; Fred D. Murdock, Murdock Webbing Co.; Albert E. Noelte, Priscilla Braid Co.; John B. Sidebotham, John Sidebotham, Inc.; T. N. Wakeman, Bridgeport Fabrics, Inc.

Government action shapes the post-war future for the industry.

Against the background which these Governmental actions will establish, there are vital tasks which industry must perform for itself and on its own responsibility. First in point of time and importance is orderly re-conversion of machinery to peace-time production. Because existing equipment will be so worn and battered by its 24-hour operation, the greater part of the industry will need entirely new equipment to establish itself on a thoroughly efficient production basis.

"MACHINERY MANUFACTURERS," said Dr. Murchison, "will be subjected to the greatest deluge of orders they have ever known. It is highly desirable that each mill operator plan for probable machinery needs as far in advance as possible and have his orders ready for placement just as soon as they can be given consideration by the machinery manufacturers."

Allied to reconversion are the plans for products and markets which must be formulated in advance. Complete reappraisal of the market for most products is in order, since they will be affected by new finishes, applications, needs, materials and finishes, whether the end-use is industrial or for the individual or his household. Research on a broad and coordinated scale will be essential to develop the most effective utilization of textile fibers and to meet the competition of products from other industries, such as paper, plastics, etc.

The C.T.I. recognizes that an important part of this planning is cooperative promotion of cotton goods on a greater scale than ever before attempted. This drive will be focused on improving distribution methods, influencing fashion choice, stimulating industrial as well as personal consumption, and developing better public understanding and appreciation of the utilities of cotton products.

"In order to launch more successfully the innovations of fabric, of finish, of utility and of fashion," Dr. Murchison has pointed out, "a closer working coordination of the various groups within the industry will be sought. The customary relationships of spinner, of weaver, of finisher, of converter, of garment manufacturer and interior decorator, wholesaler and retailer, have resulted in great excellence of performance during periods which are comparatively static as regards the character of the industry's output and general economic conditions. But in periods of rapid change, which involve the revolutionary transitions which we must anticipate in the near future, the customary relationships of the industry do not facilitate rapid and constructive adjustment. The lines of cleavage not only act as a barrier to complete understanding through the various sequences, they also serve to create apparent rivalry and conflict of interest where there should be unity of effort and singleness of purpose. I believe that the industry will wish to devise some method of a permanent character which will bring into closer coordination its various divisions when speedy transitions in types and purposes of goods are in progress."

A FURTHER RESPONSIBILITY in the post-war plan is preparation for some degree of curtailed production. The success of the earlier phases of the program will minimize the let-up and aid in solution of the post-war employment problem. However, the fact that some time-lag may ensue is being given attention, and prevention of even temporary unemployment among any appreciable numbers of textile employees is an important part in the cooperative responsibility laid on the industry as a whole.

A highly detailed preliminary outline for the cotton-textile industry in the post-war period was prepared last month by C.T.I. A few high spots in that outline are as follows:

Importance of the condition of the national economy to the cotton-textile industry; cessation of hostilities probably will be less abrupt than in World War I; relief and reconstruction abroad; domestic shortages of consumer goods; deferred maintenance and replacement of equipment.

Unfavorable factors will include: pressure for hasty removal of Governmental controls; effort of individuals to quickly convert savings into goods will give basis for extensive inflation; industries not engaged in war work will have small capital resources; inflated cost structure; depletion of working capital and capital resources by corporate taxes; resistance of labor unions to readjustment of wage structure; the sheer magnitude of the employment problem.

The post-war situation of the cotton-textile industry: concern with problem of war surplus disposal; minimizing effect of war surplus liquidation; heavy financial burden during transition period.

Importance of industry-wide financial information during immediate post-war period; current statistics of profits and losses will be helpful in wage negotiations.

Questions that must be answered in forming policy with respect to equipment: should existing equipment be repaired or modernized; how much should be scrapped; in what types of equipment can the greatest technological advances be expected; what recent advances have been made in the equipment for other fibers; to what extent will new equipment permit interchangeability of fibers; financing of new equipment.

What can individual mills do to facilitate modernization? Accelerating the rate of machinery replacement by exporting some of our existing equipment to industrially backward countries and replacing it with new equipment. The country that is late with machines will be at disadvantage because of reluctance of buying countries to mix machinery.

Automatic Controls Speed Up Production

Mill surveys uncover specific examples and indicate importance in post-war era

By FRED MERISH

SEVERAL EXAMPLES of the way in which use of automatic control instruments are helping to speed up production were disclosed by a survey made recently by the writer in a number of textile mills. The survey was by no means complete and did not cover all types of control instruments or all the textile applications for any one type. However, the results of the investigation indicate conclusively that modern control equipment is an inexpensive means for boosting production, and, at the same time, improving quality, reducing percentage of seconds, and lowering costs. Following are a few of the installations noted and the results obtained.

One mill visited had recently installed a modern slasher control system. Previously this mill had been having all kinds of trouble in the warp sizing department. Attempting to operate at top speed with inadequate controls, the management found that production was badly hamstrung and that considerable damage was done to the yarn by over-drying; at times the sizing solution "broke down"; at other times mildew developed; frequently there was excessive shedding of size in the weave room. After a complete modern system of slasher control was installed, slasher speeds were raised 35%; weave room efficiency increased due to better sized warps; a substantial saving in steam resulted; and a reduction in amount of sizing materials, estimated at 20%, was effected.

Similar examples were found in other mills, where installation of modern controls had broken a bottle-neck in one department or another. This was particularly true in finishing plants.

In one plant the management reported that there had been a high percentage of seconds and rejects because of temperature variations in a drying operation. At times the temperature was too low, and the goods were improperly dried or required too long a time for proper drying. At other times the temperature was too high, and the goods were too harsh and the luster was injured. Installation of an automatic temperature controller cured this condition and insured uniform drying.

In a second finishing plant difficulty had been encountered in maintaining a uniform nip on the squeeze rolls of a padder. Accordingly, a pneumatic loader with automatic pressure control was installed. This device solved the problem, maintaining the proper nip, even when the rolls have worn slightly and are not perfectly round, and preventing bouncing of the squeeze rolls.

THE SUPERINTENDENT OF A BLEACHERY stated that installation of automatic controls on peroxide bleaching equipment had been followed by a 25% increase in production, some saving in peroxide and other chemicals, and more uniform and brighter whites on the goods. He said also that it had helped in the dyehouse as it now is possible to match colors more quickly and the shades are more uniform.

Several plants included in the survey had recently replaced worn-out or absolete motor control equipment with more modern devices. In general, the new controls have proved simpler, less likely to get out of order, and more flexible. A personal observation of the writer is that in most textile mills, the motor controls are too rigid. More flexible controls would be advantageous particularly when changing from one type of work to another or when changing the layout of a department.

Several executives commented on the advantages which had accrued from installation of air conditioning equipment fitted with automatic controls. By maintaining a uniform humidity and temperature, they were able to obtain better running yarns and more uniform product. This had been particularly helpful in some plants running on Government contracts where it is necessary to manufacture to strict specifications. Also it had proved especially advantageous in rayon weaving mills, due to the fact that the textile strength and elongation of rayon are affected by changes in humidity.

Mill engineers in three mills which had installed automatic boiler control instruments were enthusiastic over the results obtained—higher efficiencies and savings in fuel costs were among the advantages cited.

Power factor control is a matter which is receiving more and more attention in the textile industry. By installing capacitors one mill was able to correct the original power factor of 66.1% to 97.1%, resulting in an average monthly saving of $125. [Capacitors are not usually classified as control instruments, but in one sense can be considered as controllers—*Editor.*]

Engineers and other executives interviewed all agreed that systematic inspection and maintenance of control equipment are essential if they are to function properly. Although many types of control instruments are delicate, they will render satisfactory, dependable service for many years if given proper care. For example, an automatic temperature controller in one bleachery had been giving continuous accurate performance for more than 10 years. It is a good idea to have one man on the maintenance crew who is responsible for the inspection and care of all control equipment. Some plants in other industries have trained "instrument men" who specialize in the maintenance of indicating, recording, and control devices; and it probably would pay the larger textile mills to develop one or more instrument men.

A FINAL CONCLUSION drawn from the survey is that automatic control equipment is becoming more and more important in the textile industry and will continue to do so in the post-war era. New fibers, new processes, and new finishes call for strict control of temperature, humidity, and other conditions. The post-war consumer demand for textiles of high and uniform quality will make it necessary for mills with obsolete or inadequate controls to install modern automatic equipment. Fortunately, the advantages far outweigh the expense. As part of their planning for post-war modernization, mill executives would do well to investigate every operation and department to determine where installation of control equipment can help to improve the efficiency.

How to Make Blankets Warmer

Tests indicate more nappings, increased pickage and finer wools increase warmth

AN INCREASE IN THE WARMTH of blankets through a greater number of nappings, through a change in the weave or the blanket construction, or through the use of finer wools is possible, according to a report presented by Ephraim Freedman, director bureau of standards, R. H. Macy & Co., Inc. before the September meeting of the American Association of Textile Technologists. Investigation of the thermal insulation, or warmth, of blankets were threefold: (1) to study the effect of fabric construction and of after treatment on warmth; (2) to compare relative air permeability with relative warmth; (3) to study the effect of humidity on warmth. Thermal insulation or warmth tests were found in watts per °F. (temperature difference) and later changed to per cent thermal insulation. Blanket samples were provided by Lebanon Woolen Mills, Inc., Lebanon, Tenn.

Yarns were made of two grades of wool, that is, of 50-54s and 56-58s quality. They were spun into 8-cut yarns. The filling yarns were spun with 6 t.p.i., and the warp yarns with 9 t.p.i. These yarns were used to produce the following blanket fabrics, a twill with 20 picks per inch, a twill with 24 picks per inch, and a twill with 28 picks per inch. The warps of all fabrics were loomed 23 ends per inch. Blankets were also made with the same cloth count as the twills, but in lock, crepe, and plain weaves. One set of samples were of 50-54s wools and the other of 56-58s wools.

Thermal insulation values in per cent are given in Table I showing the warmth of twill weave blankets of 20, 24, and 28 pick construction made from 50-54s wool in various stages off the loom to the sixth napper. It is noted that the drying operation reduces the thermal insulation, but it is more than restored by the first napping operation. Thereafter the general trend is for each succeeding napping operation to increase the insulative value of the blanket material. Of further interest is the evidence that

(*Continued on page 81*)

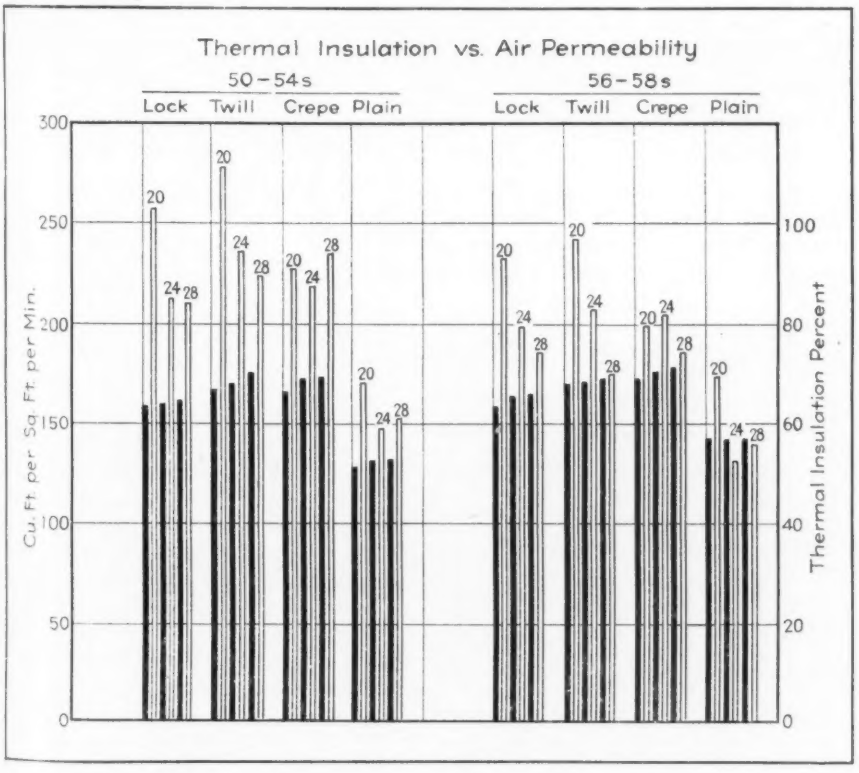


Fig. 1. Chart showing relationship between thermal insulation and air permeability for different types of blankets and made of 50-54s and 56-58s wool. Solid line indicates percent thermal insulation, whereas hollow line represents air permeability. Numbers above lines indicate number of picks per inch of each fabric tested.

Table I. Thermal insulation of 50-54s quality wool blankets

Process at which Tested	*Per Cent Thermal Insulation*		
	20 picks	*24 picks*	*28 picks*
Off loom	50.4	48.2	49.6
Off dryer	....	45.7	47.6
1st napper	50.7	50.7	50.8
2nd napper	56.1	51.5	56.7
3rd napper	56.0	56.0	59.8
4th napper	62.4	60.1	62.8
5th napper	63.8	62.9	65.2
6th napper	66.3	69.3	69.7

Table II. Thermal insulation from sixth napper, 50-54s quality wool blankets

Weave	*Per Cent Thermal Insulation*		
	20 picks	*24 picks*	*28 picks*
Lock	61.3	62.8	63.5
Twill	67.3	67.5	69.4
Crepe	65.7	67.9	68.0
Plain	50.6	51.6	52.9

Point System for Grading Fabrics

Simple method for use in cloth room is effective in reducing weaving defects

CLOTH EXAMINER'S REPORT

Examiner: D.E.G. Date: 9-15-43

Lot	Loom	Cut	Weaver	Imperfection	Grade
13562	192	234	BWC		A
13562	199	235	WAA	1 float, 1/2 in., 3 s. ends out	B

Qual.	A	B	C	D	Total	Percent Defective
13562	14	21	0	1	36	2.8

Form for recording defects and cut grades.

By ROBERT E. SPEAR

CLOTH EXAMINING is regarded as an easy job in many mills. If the inspector handles a large number of cuts in a day, he is classified as a "good man." Nobody asks how many yards or cuts he saved the mill from utter ruin, which, in reality, is the main part of his job. Actually, the inspector who has the interests of the mill at heart does not put the number of cuts examined ahead of everything else. His main objective is to reduce the percentage of seconds and rejects. To aid him in this endeavor, a point system for grading fabrics in the cloth room is a big help. The system described below was developed originally for use in rayon weaving mills, but can be readily adapted to other types of plants.

A suggested method of grading defects according to the point system is shown in Table I. The table should, of course, be expanded to include other defects encountered in woven fabrics.

[The series of articles appearing in TEXTILE WORLD on "Defects in Woven Fabrics" can be used as a guide in setting up such a table—*Editor.*]

Cuts are graded according to the system as shown in Table II. When the goods are examined, the inspector records the number of imperfections and the final grade of each cut on a form similar to the one illustrated in Fig. 1. After an entire lot has been inspected, the number of cuts in each grade is recorded at the bottom of the form.

Many Grade B cuts can have the defects partially corrected in dyeing and finishing, and may later be regraded and passed as Grade A cuts. Also Grade C cuts may later pass as Grade B. However, Grade C and Grade D cuts are classified as defective and are difficult or impossible to salvage. If rejects are running high, the records on the form illustrated will show this, giving warning that the defects should be traced to their source and steps taken to prevent them.

Whenever a major imperfection is found in a cut, the weaver should be called to the inspecting machine, shown the defect, have the seriousness of the defect explained, and cautioned to be more careful in the future. It is good practice to keep a special record of badly woven cuts and to have the weaver sign the record for later reference. Whenever a cut is classified as Grade C or D, the loomfixer and the weave room overseer, as well as the weaver, should be called to the inspecting machine.

If an imperfection runs to the end of a cut, there is danger that it has not been detected by anyone and probably is still running in the next cut being woven. In this event, the inspector should go to the loom immediately, show the weaver the error, and instruct the fixer to check the loom. A written order should be given the fixer showing loom number, cut number, lot number, and name of imperfection found. The fixer should mark down his finding on this order and also what changes he makes. The inspector later returns to the loom after the order has been returned and makes certain the error has been corrected. If the defect still occurs in the next cut, there should be no delay in getting the superintendent to the inspecting machine so that he can handle the matter personally.

Table I. Grading Defects by Points

No. Defects per cut	*Points*
1 end missing (for each yd. with this defect)	1
1 double end missing (for each yd. with this defect)	2
1 lay mark	5
1 broken pick	10
1 float, ½-in. long	20

Table II. System of Grading Cuts

Points per cut	*Grade*
0	A
1-30	B
31-64	C
65 and over	D

Go Into Reverse on Textile Outlook

Officials, at combed yarn meeting, try to offset statements on reduction

THE MAIN IMPRESSION from the very excellent forum which featured the annual meeting of the Southern Combed Yarn Spinners Association at Charlotte, N. C., Sept. 17, was that the now well-known Washington process of giving out a statement and then frantically trying to take it back is being repeated. Comments by Government representatives were directed primarily to an attempt to assure the textile industry generally, and the combed yarn spinners specifically, that 1944 would see no relaxation in Government demands for textiles, and consequently no particular easing of the civilian supply. Coming less than a month after official statements in Washington forecast a reduction of 50% of the takings of cotton and wool fabrics for 1944 as against 1943, the turnabout was rather startling.

In this connection, Major General C. L. Corbin, the Assistant Quartermaster General, stated:

"Due to changes in specification which have resulted from experience in the Theatre of Operations, we deferred certain contracts—notably the 5-oz. poplin. Due to a leveling off of our requirements, it was deemed advisable to slow down production of 6-oz. shirting. Consideration was given to slowing down the 8.2-oz. uniform twill, but additional international aid and Army Exchange Service requirements necessitated keeping this production at the current rate. In general, our requirements of combed yarn for the next year will be close to what we have used during the past year, so that the Quartermaster Corps will need production at the current rate and we cannot afford a slow-down or let-up."

A similar viewpoint was expressed by Bruce McCullough, of the Cotton Section of the War Production Board, when he stated that maximum production, "certainly no less than the highest point you have experienced," should be maintained. However his remarks gave some clue to the solution of this puzzle. He stated that every point of relaxation in demand for yarn for military purposes will be replaced by three or four new points, the total of which can be as great as or greater than the military total.

Observers at the convention drew the deduction that, while it is probably true that the military requirements in 1944 will be sharply less than those in 1943, other claimant agencies have probably become excited about the chance of a production let-down in the textile industry due to the forecast of such reduced purchases, and have prevailed upon all officials to go into reverse on this story. Their further deduction is that when comment was made in Charlotte to the effect that the total Government demand in 1944 would be at least as great as in 1943, the reference was to a combination of military, Lend-Lease, rehabilitation, etc. Unfortunately, however, all attempts to bring out any specific information concerning the quantity of fabrics met with frustration.

THE CONTRIBUTION made by Southern Combed Yarn Spinners Association to the war cause was made clearly evident in the address of Wm. L. Balthis, president of the association, and in the annual report of Mildred G. Barnwell, executive secretary. This contribution has been in the face of serious difficulty, particularly manpower shortage, as evidenced by the following statement by Mr. Balthis:

"The question of manpower has grown to be one of our most acute problems. It is not only a problem itself, but it is the crux of many other problems. . . . We have seen our production drop. The percentage of decrease in our total output at this time is not so great compared to our annual output, but the trend of increased costs and of decreased production should be examined thoughtfully. It is costing us more money today to make less yarn than a year ago."

OFFICERS ELECTED at the meeting include: president, Caldwell Ragan, president of Ragan Spinning Co., Gastonia, N. C.; first vice-president, F. L. Smyre, Jr., president and treasurer of A. M. Smyre Co. and Morowebb Cotton Mills Co., Gastonia, N. C.; second vice-president, William J. Pharr, vice-president and treasurer, Stowe Mills, Inc., McAdenville, N. C.; treasurer, T. L. Wilson, secretary and treasurer of Ruby Cotton Mills, Inc., Gastonia, N. C.

The principal speaker at the luncheon was Judge Fred M. Vinson, Director of the Office of Economic Stabilization, who was introduced to the spinners by O. Max Gardner, former Governor of North Carolina, and known throughout the textile industry.

The award to the retiring president, Mr. Balthis, was made by A. G. Myers, president of Textiles, Inc.

(Left to right) Caldwell Ragan, newly elected president, Southern Combed Yarn Spinners Association; Mildred G. Barnwell, secretary; Judge Fred M. Vinson, director of OES, luncheon speaker; W. L. Balthis, retiring president.

To Improve Winding Efficiency

You must pay more attention to the operatives and to upkeep of machines

LUBRICATING AND CLEANING CHART
for Model 102 Foster Winders

LUBRICATION

Part	*Schedule of Work*
Roll, loose-shell	Grease once every 3 months. Apply medium grease with small pressure gun. Grease all other ball bearings at the same time, using large pressure gun.
Cams	Grease twice a week, Monday and Thursday, using large gun and medium grease.
Guides	Oil daily with one drop of heavy machine oil.
Spindles	*Do not oil.*
Socket and Double Stud	Oil bearings once a week on Monday, using heavy machine oil.
Felt Oil Wheels	Oil twice weekly, Monday and Thursday, using heavy machine oil.
Split Sheave	Grease once a week on Monday with medium grease.
Gears	Grease once a week on Monday with medium gear grease that does not throw out.
Conveyor Roll	Grease ball bearings once a year with a medium grease.

NOTES: Increase lubricating frequency with additional shifts. For ball bearings use a mixed based grease of medium consistency, and low starting torque. For cams and gears, use aluminum or soda-base grease of clinging type that will not throw off.

CLEANING SCHEDULE

Ends must be run out one time on each shift, and winder cleaned thoroughly with a brush. Each girl shall clean her own machine side. Monday and Thursday, stop winders to clean all moving parts – heads, motors, guides, conveyors, gears, etc.

Lubricating charts similar to this should be placed on the wall in a conspicuous place near the winders.

By W. F. CROWDER
Trenton Cotton Mills, Gastonia, N. C.

WINDING OF YARN for sale or for use in other mill processes is an expensive operation at best. To get the highest production and best quality at the lowest cost from the winding operation, the supervisor must give considerable attention to the customer's yarn specifications, the quality of the product to be wound, the maintenance of the machines, and the efficiency of the operator. There are instances where serious bottlenecks have developed in production because one or more of these factors were not being given enough attention by the winder supervisor. Improvement in winding efficiency can be attained if the winder supervisor gets the correct over-all viewpoint and puts some real effort into improving conditions previous to and at the winders.

First, the supervisor must get the customer's viewpoint. In the final analysis, the customer is the real "boss" over the winder operation. He must have yarn of a certain quality, and the packages made for him must be so wound that they run properly on the machines on which he uses them. Otherwise, low-quality, poorly wound yarn will give him considerable trouble by lowering the efficiency of his workers, and making an excessive amount of waste. After all, the customer is trying to operate his business profitably, and at the same time maintain satisfactory earnings for his employees, who are very likely on a piece-work basis. Therefore, the winder supervisor should endeavor to learn how the customer processes his yarn, and into what type of goods it is fabricated, and make a package that meets the customer's requirements. Although specifications are issued at the mill as to the yarn number, size of package, and type of wind, the supervisor can often suggest changes that will allow a customer to get higher efficiencies from his operations. This naturally builds customer good will.

FATIGUE OF WINDER OPERATIVES —usually women—is of great importance. I wonder how many supervisors have ever wound a day in their lives?

If they haven't, there is a real surprise in store for them when they try it! Winding is one of the hardest and most exacting jobs in the mill. This is speaking from experience too, since my first job in the mill was running one side (50 spindles) on an old Model 30 Foster winder. The hum of the machine, the monotonous routine of tying knots, taking off cones, etc., tends to cause fatigue. The constant motion of hands and fingers and the necessity for standing or walking add to fatigue. There is also a certain amount of tension caused by the effort to maintain a pace that will give satisfactory production. If the overseer will consider all these factors, he can do much to eliminate or reduce fatigue. Compulsory rest periods, time out for refreshments at cafeterias or lunch wagons, clean rest rooms, and good lighting and ventilation are excellent means of reducing fatigue. In addition, the overseer should show some personal interest in the life and welfare of each worker. A little interest or an appreciative word now and then can work wonders in improving morale.

Winder operatives should be paid by the piece work or incentive wage system in order to get production to a high level, and maintain it there. The fact that they have a daily or weekly goal to reach or surpass compensates for some of the monotony of the work. Quality, however, is a matter of persistent supervision of the operative's methods and careful inspection or reinspection of production. Most plants have a system of operative identification in the form of a sticker on the tube or cone showing the operative's code number. Customer complaints can be traced to the proper operative through the number on this sticker and corrective measures taken. Occasional re-inspection of each operative's cones or tubes for careless work can do much to hold them up to the standard of quality set by the plant.

The efficiency and skill of the employees contribute largely to the economy of the winder operation. An overseer can check and double-check, but when his back is turned, he cannot be sure he is getting the best winding. Only by training operatives thoroughly in all the best methods of getting production and quality, and then insisting that these methods be practiced, can a supervisor be sure of good work. By inspecting a few of the operative's finished cones daily, and checking the spinning bobbins she rejects and her general habits of cleanliness, such as care of clothing, hands and nails, etc., the supervisor can get a good idea of the efficiency and quality of her work. Textile plants have found the Job Instructor Training sponsored by the War Manpower Commission of great value in introducing good training methods to all foremen and job instructors.

WINDER SPEEDS on many types and counts of yarn have been increased over what they were a few years ago, and with good yarn, substantial increases in production can be realized. The strength of the yarn, the type and the amount of tension, and the setting of the slub attachment limit the winding speed, rather than the winder itself. It is important, therefore, that the yarn received from other processes to be wound is of the quality required, and is not damaged or laid on the bobbin so that it will slough off and cause waste, spindle stoppage, and loss of production. Good yarn, free from gouts or slubs, and of sufficient strength can be wound at much higher speeds than the same count of a lower quality yarn.

Winders require regular fixing and overhauling to keep them operating efficiently. Stock vital parts that are needed to keep the winders running, and conserve supplies by having parts repaired if possible. If a damaged part is thrown away now, it may cause a shutdown for an indefinite period. By building a cabinet to hold all the winder supplies near the winders, one can save many unnecessary steps to and from the supply room. Winder lubricants and cleaning and greasing equipment can also be kept in such a cabinet.

Winders require regular oiling and greasing. The high speeds of many machine parts cause excessive wear when oil is not applied regularly. A good package cannot be made on a worn winder. It is good practice to post a lubricating chart on the wall in a conspicuous place near the winders, and to train each section man or oiler so that he will follow the chart religiously day by day. A typical chart is shown in the accompanying illustration. On such a chart certain days should be set for lubricating certain parts, so that on no one day will the machines be down long enough to impair the operative's production. Use the lubricants recommended by the manufacturer of the winder. Cleaning of the machines can be scheduled to be done at the time it is stopped for lubricating, thus cutting down further on the time, which in turn helps the operator. Down time used for cleaning and oiling a winder is a good investment and increases the life of the machine.

How to Make Blankets Warmer

(*Continued from page 77*)

succeeding napping operations add more to the warmth value than does the addition of four and perhaps of eight picks to the fabric construction. However, there is a limit to the number of napping operations without destroying the value of the blanket.

In Table II are shown the per cent thermal insulation after the sixth napping of lock, twill, crepe, and plain weaves made from 50-54s wool. The twill and crepe weaves afford the most warmth, the lock weave ranks next, and the plain weave provides least warmth.

AIR PREMEABILITY TESTS confirmed that everything else being equal, the air permeability varies inversely with the closeness of the weave. The drying operation reduces the air permeability, but in general, successive nappings increases this value. Likewise, as each succeeding napping operation added more to the warmth than does the addition of four and perhaps of eight picks to the fabric construction, the opposite generally holds true with regard to air permeability.

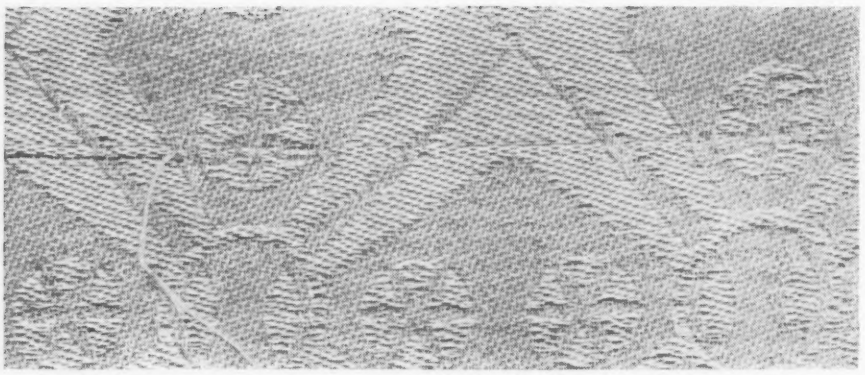
Relationship between thermal insulation and air permeability, as found in tests for the different types of weaves, is illustrated in Fig. 1.

The following conclusions were drawn concerning air permeability of lock, twill, crepe, and plain weaves. (1) Regardless of type of weave an increase in pickage results in a decrease in air permeability. (2) Everything else being equal, lock, twill and crepe weaves disclose no significant differences in air permeability, whereas the plain weave is definitely less air permeable than the other weaves. (3) Fabrics composed of the finer wools are less air permeable.

HUMIDITY AND WARMTH—Tests disclosed that regardless of weave and pickage, an increase in humidity of the surrounding air results in a lowering of the thermal insulation or warmth of the material. The same result is also brought about by an increase in air velocity.

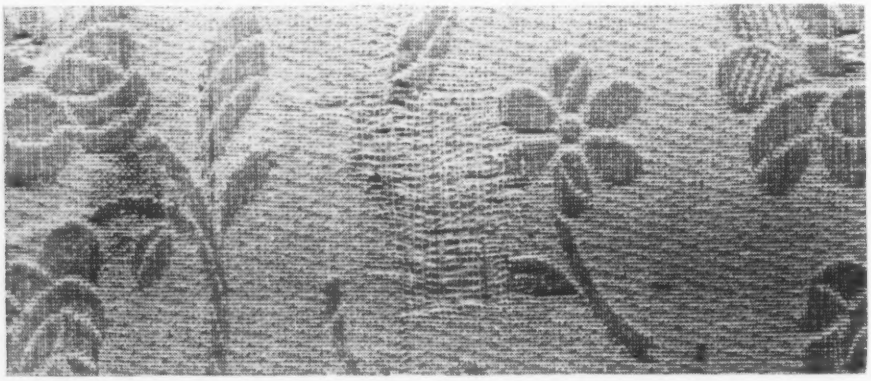
Defects in Jacquard Fabrics

Causes of some common imperfections traceable to weaving and loomfixing



Broken Pick—A portion of a pick is missing, creating a horizontal streak in fabric. Sometimes the broken pick projects from the fabric, indicating location of defect. *Causes:* Aside from the normal causes, such as yarn cut by shuttle, etc., an additional cause in jacquard fabrics is carelessness of weaver in not turning back the cards to find the correct pick.

Double Pick in Fabric—Narrow rib formed by two picks inserted in the same shed: (near top of sample). *Causes:* Faulty filling bunch causing a double length of yarn to be drawn into the shed; also by weaver not finding the correct pick when starting up the loom.



Floats—Warp ends floating over filling without proper interlacing of the ends. An oil spot is also shown. *Causes:* Broken ends become entangled in the warp and prevent the ends from making a perfect shed. A broken harness twine catching in the shed will produce the same result.

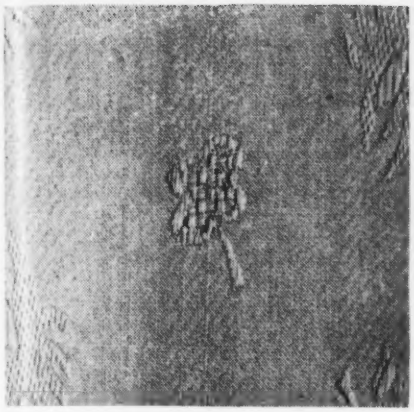
Articles illustrating fabric defects have appeared in the March and June, 1939, May and November, 1940, May, 1941, August, 1942 and May, 1943, issues of TEXTILE WORLD. Illustrations and definitions of the first 16 defects, those presented in the March, 1939, article, have been included in the "Glossary of Textile Terms Relating to Textile Materials," issued by Committee D-13 ASTM. Those imperfections illustrated and defined in the later series are now being considered for inclusion in the glossary. In addition, the Army Quartermaster Corps has ordered several hundred reprints of the entire series for use in training field inspectors, and many reprints have been sent to mills at their request for use in training courses and instructing employees.

By THOMAS NELSON

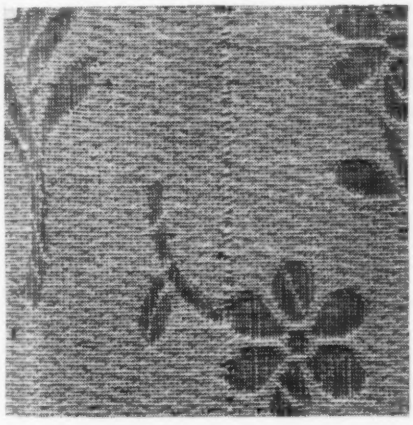
Dean Emeritus of the Textile School
North Carolina State College

IN WEAVING JACQUARD FABRICS particular care must be taken if defects are to be kept at a minimum. It is necessary for the weavers to be specially trained; and the fixers, the second hands, the overseers, and the superintendents should be thoroughly acquainted with the mechanism of the jacquard, the tie-up of the harness, the adjustment of the loom and the head-motion, and the causes of defects when they occur. Also, these operating executives must be able to recognize fabric imperfections and recommend remedies when necessary.

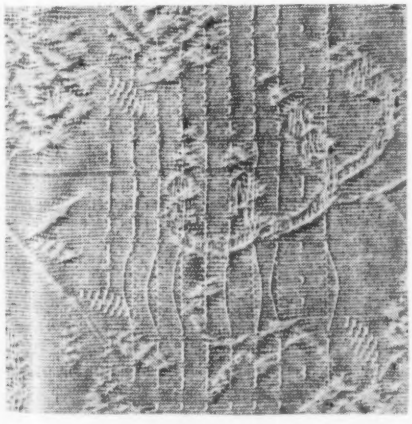
Constant vigilance is essential in setting the various parts of the jacquard, the timing and operation of the cylinders, the proper lacing of the pattern cards, the setting and timing of the shedding motion, etc., to prevent the making of defective fabrics. A number of common fabric defects are illustrated, their appearance described, and causes of the defects given. Like previous articles in this series, this one will prove useful in instructing weavers, loomfixers, and inspectors. Also, it should be of assistance in tracing defects and establishing a standardized system of identification throughout the mill.



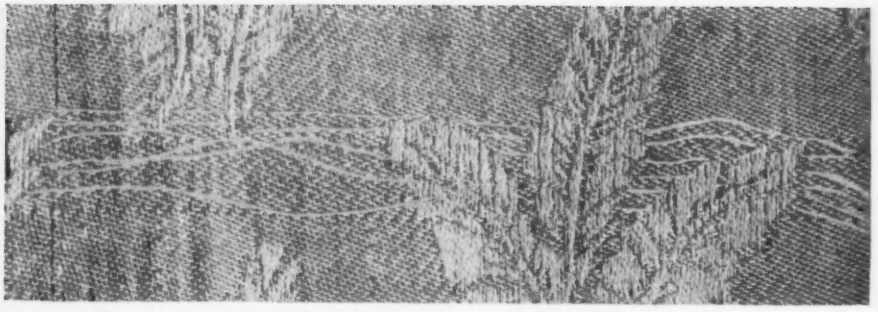
Ends Out in Stripe—Missing warp end gives the appearance of a stripe running vertically in the cloth. *Causes:* Defective knot causes an end to break. Weaver wove a length of fabric before discovering and drawing-in the broken warp end.



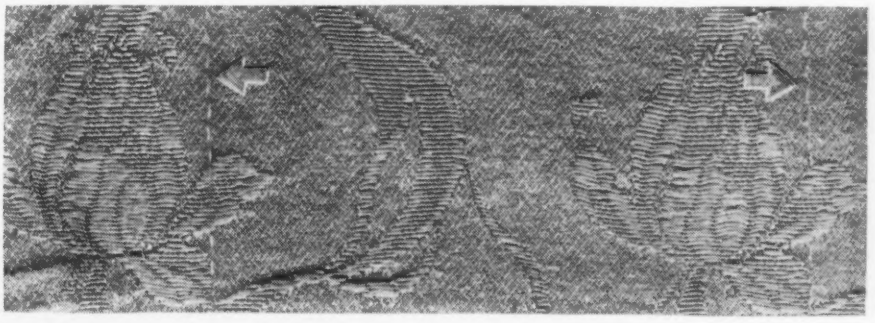
End Out on Every Repeat of Pattern—Vertical stripes appearing in fabric in same relative position in each repeat of pattern across the fabric. *Causes:* Neck band or tail cord broken which allows all the ends operated by this cord to float on the fabric. The fabric illustrating this defect was woven on a double-action jacquard.



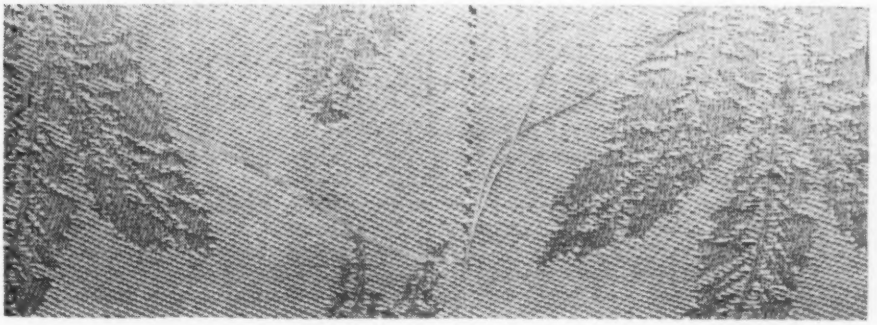
Ends Weaving Under Fabric Every Repeat of Pattern—A series of vertical stripes appearing in regular order across a fabric. *Causes:* Certain needles in one row of the machine not operating properly because of an obstruction.



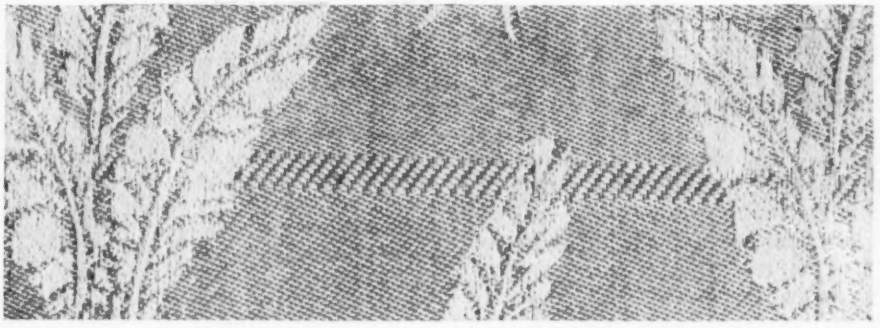
Filling Floating on Face of Fabric—Filling floating over fabric at regular intervals. *Causes:* One of the knives on a double jacquard loosened and dropped, causing the filling to float on the face of the fabric at definite intervals. On fabric shown floats occur once every eight picks.



Ends Floating on Face of Fabric—Warp ends, generally a single end, appear at definite intervals, according to the weave, over the face of the fabric. *Causes:* Floats are caused by a broken neck band or tail cord. A broken tail cord will not raise the end, thus instead of floating a number of picks, in this fabric four picks, the end will float for nine picks. Fabric was woven face down with five-harness sateen weave on double-action jacquard.



Ends Drawn Wrong in Harness—A variation appearing in the weave in which the ends are interlaced in an incorrect manner. *Causes:* Ends not drawn into the harness in correct order. In this fabric a straight draw was used from back to front. Two broken ends were mis-drawn, one being placed ahead of the other: thus, instead of drawing 8, 7, 6, 5, 4, 3, 2, 1, they were drawn 8, 6, 7, 5, 4, 3, 2, 1.



Broken Pattern—Variation in pattern in cloth extending full width of the fabric. *Causes:* Cards being turned out of order. Fabric shown was made on double-action jacquard and one card was turned ahead of another, producing a twill instead of a sateen weave.

How to Make Up the Loom Book

Suggestions which will aid the spinning overseer in scheduling yarn production

By F. H. GUNTHER and MARCUS GROSS

IN MANY COTTON MILLS the overseer of spinning has the responsibility of drawing up a production schedule of his frames to keep up with the requirements of the looms. This is no easy task. The production of the looms, total number of looms running, various sizes of yarns needed, and allotment of frames are all vital factors which must be considered. The scheduling must be systematic and efficient. No haphazard method has ever given good results. One excellent way of scheduling is to make up a loom book as shown in the accompanying table.

The first step in making up the loom book is to ascertain the pounds per 100 yd. of warp and filling. The standard formula for warp is:
[Number of ends × (100 + Percentage of take-up)] ÷ (Yarn count × 840) = Lb. per 100 yd. of warp.

For example, assume a warp of 2,500 ends, 9% take-up, and 16s yarn. The calculation is:
[2,500 × (100 + 9) ÷ (16 × 840)] = 20.3 lb. per 100 yd. To find pounds per yard divide by 100.

The formula for filling is:
(Width of reed × picks per in. × 100) ÷ (Yarn count × 840) = Lb. per 100 yd. of filling.

For example, assume a reed 50 in. wide, 100 picks per in., and 16s yarn. The calculation is:
(50 × 100 × 100) ÷ (16 × 840) = 37.2 lb. per 100 yd. To find pounds per yard divide by 100.

The next step is to determine the production of the looms. If the production is 80 yd. per loom per week, the amounts of warp yarn and filling yarn required are found by multiplying the pounds per yard of each by 80.

The formulas given above and the productivity of the looms should be recorded in the weave room, and the overseer of spinning should make use of them in making his calculations. Knowing the number of looms on a given construction of cloth and the production per loom, he can easily figure the total amount of warp and filling yarn required for those looms.

The next step is to ascertain the production of the spinning frames. The authors use the following formula:

(Hank constant × Front roll speed × Number spindles per frame × efficiency) ÷ Yarn count = Lb. per frame per 40 hr.

For example, assume the hank constant is 0.249, front roll speed is 190, spindles per frame 228, efficiency 90%, and yarn count 16s. The calculation is as follows:
(0.249 × 190 × 228 × 0.90) ÷ 16 = 605.75 lb. per 40 hr.

The constant is derived from the following formula:
[1 × 1 × 3.14 × 60 min. × 40 hr.] ÷ [1 × 36 in. × 840 yd. (1 hank)] = 0.249

The constant 0.249 is standard for 1-in. diameter front roll, and 40-hr. week, and obtained from "Yarn Count Constants," Dec., 1942, TEXTILE WORLD.

Other constants can be derived for different front roll diameters, and varying hours per week. Use of such constants shortens the calculations needed for determining spinning frame production.

The following step is to list production of the spinning frames running on the various counts of yarn.

The next step is to total the amount of yarn of each count required by the looms.

The final step is to determine the number of frames required to keep the looms running. This is done by dividing total pounds of each count of yarn by pounds of that count produced per frame. For example if, 13,525 lb. of 24s filling yarn is required and production of that count is 415 lb. per frame, 33— frames will be required. (13,525 ÷ 415 = 33—). If the number of frames required to keep up with the looms exceeds the number in place, it will be necessary to run some frames two shifts and, in some instances, three shifts. The way in which the frames are scheduled for one-, two-, and three-shift operation is shown on the loom book.

Waste in the weave room should not exceed 2%, and allowance for this can be included in the figures for total weight wanted. Scheduling of frames on warp yarn is carried out in the same manner as shown in the table for filling yarn. If the number of looms run varies during the week, the overseer of spinning makes corresponding changes in his schedule and allotment of frames.

Spinning overseer's loom book for filling yarn.

Style	*Cloth*	*Allotted Looms*	*Filling Count*	*First Shift*	*Second Shift*	*Third Shift*	*Total Lb.*	*Lb. Per Loom*	*Lb. Per Frame*	*Total Frames*	*Date*
1275	Serge	250	24	100	100	50	13,525	32.0	415	33	
24399	Serge	100	24	40	40	—		30.0	415		
6766	Serge	50	24	50	—	—		34.5	415		
4356	Serge	60	24	30	20	—		38.0	415		
29741	Twill	80	28	30	20	20	13,839	25.0	320	44	
81121	Twill	120	28	60	50	10		27.8	320		
92112	Twill	40	28	20	20	—		29.6	320		
4159	Twill	150	28	100	20	—		24.0	320		
87135	Twill	200	28	100	80	—		22.5	320		
6242	Twill	30	28	30	—	—		20.5	320		
9786	Seersucker	20	18	20	—	—	11,246	42.0	610	19	
4195	Seersucker	40	18	40	—	—		44.6	610		
5421	Seersucker	60	18	30	30	—		41.3	610		
6676	Seersucker	110	18	50	40	10		39.0	610		
2219	Seersucker	70	18	30	20	10		37.4	610		
1098	Sheeting	40	19	40	—	—	1,440	36.0	550	3	
Totals		1420		770	440	100	40,050			99	

Frames available in mill — 50

First Shift	*Second Shift*	*Third Shift*
50	50	—

Nomograph for Worsted Spinners

YARDAGE OF YARN ON A SPOOL, package weight, number of packages, etc. are factors in Bradford spinning which must be balanced to obtain the desired amount of yarn necessary for the filling of fabric orders. Use of a nomograph for determining yardage of yarn on packages of various weights will save some calculations for those operating executives charged with the planning and determination of number of packages of yarn to be spun.

Relation of the package weight and yardage of a given count of yarn may be represented by the following expression:

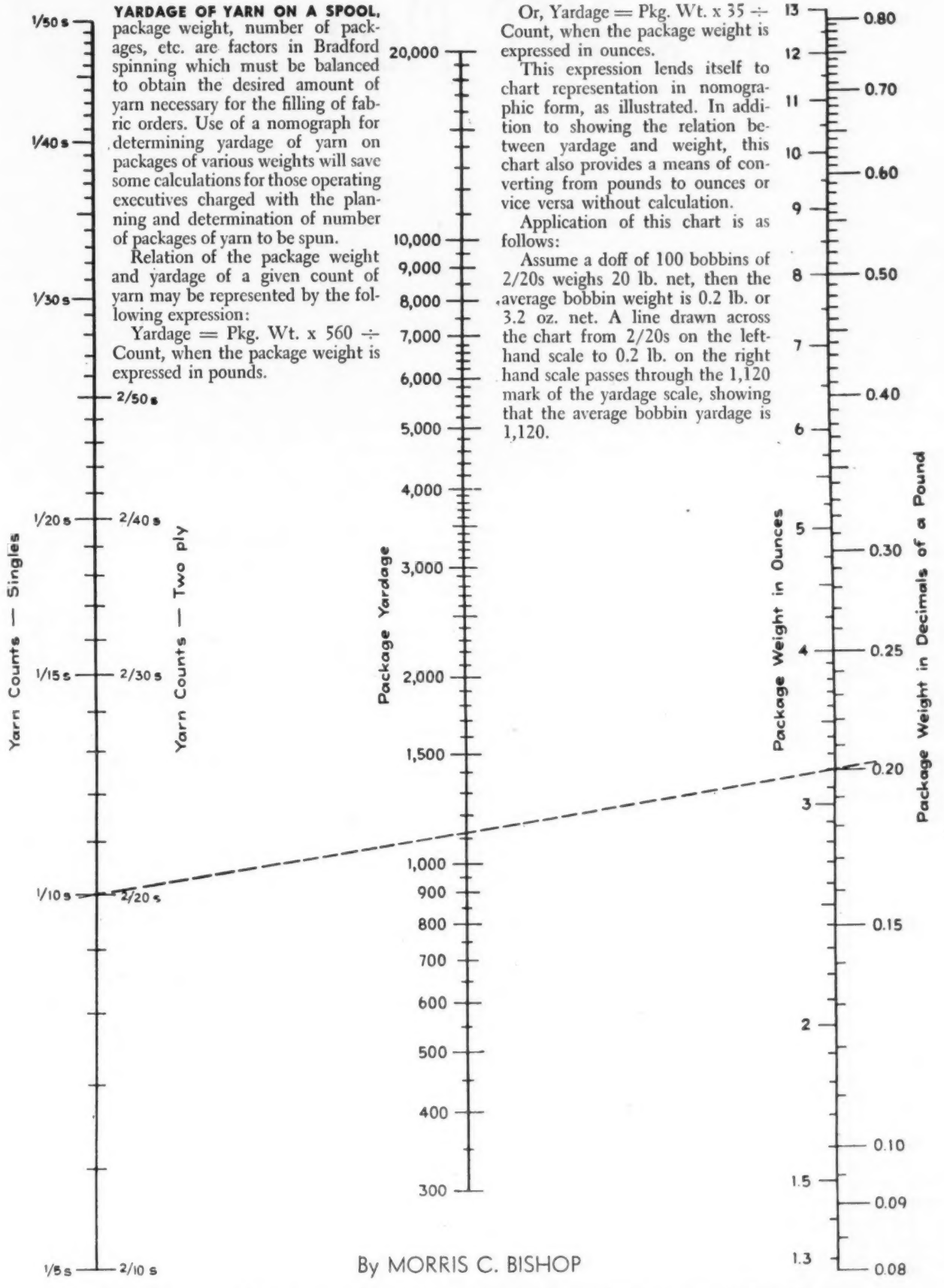
Yardage = Pkg. Wt. x 560 ÷ Count, when the package weight is expressed in pounds.

Or, Yardage = Pkg. Wt. x 35 ÷ Count, when the package weight is expressed in ounces.

This expression lends itself to chart representation in nomographic form, as illustrated. In addition to showing the relation between yardage and weight, this chart also provides a means of converting from pounds to ounces or vice versa without calculation.

Application of this chart is as follows:

Assume a doff of 100 bobbins of 2/20s weighs 20 lb. net, then the average bobbin weight is 0.2 lb. or 3.2 oz. net. A line drawn across the chart from 2/20s on the left-hand scale to 0.2 lb. on the right hand scale passes through the 1,120 mark of the yardage scale, showing that the average bobbin yardage is 1,120.



By MORRIS C. BISHOP

Nomograph Giving Relation Between Package Weight and Yardage

A CLEAN Floor Is a SAFE Floor

Cleaning compounds for textile mills

By Dr. R. W. MITCHELL
Technical Director, Magnus Chemical Co. Garwood, N. J.

THERE ARE HUNDREDS OF TEXTILE MILL FLOORS that are far from safe, because they are oily, greasy, dirty, cluttered, and slippery. A poorly cleaned floor is a hazard to personnel, because of the accidents it invites and promotes. It is also a definite fire hazard. Moreover, a floor that is not properly and regularly cleaned lowers the morale of the working force. Proper floor cleaning methods are not complicated. They involve no large expense for labor or materials. Once a floor has been thoroughly cleaned, a regular routine of cleaning can be established which will insure safe floors at all times. However, there is one important factor which is not ordinarily given much consideration. The method and material used to clean a floor have to be judged not only by over-all cleaning costs and the results obtained, but on the effects of the cleaner and the method on the floor itself. Many a mill floor has to be repaired, resurfaced, or patched far oftener than it should be, simply because of harmful cleaning methods and materials. Let's consider what a logical and economical floor cleaning routine might be like.

First, the floor should be kept unencumbered with trucks, containers, etc. Decide on a safe location for these things with reference to operations and see that they are kept there.

Second, keep the floor swept clean of lint, thread, cuttings, and all other loose material that can offer fires a chance to start or provide, in conjunction with a greasy or oily surface underneath, a slippage hazard which causes falls, bruises, or broken bones. To accomplish this, a vacuum cleaning system may be economical in one case, a sweeping crew in another.

Third, tackle oil or grease spillings at once and aggressively. Don't let them soak into the floor to form a localized slippery spot, which the longer it is allowed to go untouched becomes that much harder to remove. You don't make much headway trying to soak up such stuff with paper or rags, or even with sawdust. A better and faster way is to use one of the compounds now on the market which have the property of readily absorbing grease or oil. These compounds are spread over the oily surface and allowed to stay there until they have become saturated with the oil or grease. Then they are simply swept away. It may take more than one treatment to remove a bad spot; but, when properly used, these absorbent materials leave a floor surface, whether of wood or concrete, with just a little remaining oil which is easy to remove with a good floor cleaner.

Fourth, if your floors have been neglected and are generally greasy, oily, and dirty, set about the job of getting them really clean with a safe method which will remove dirt and dig deep enough into accumulated grease and oil deposits to eliminate all slipperiness and all tendency toward a fire hazard.

STRONG ALKALIS or highly abrasive scouring cleaners should not be used on either wooden or concrete floors. It is essential, on the other hand, that the cleaner used be capable of penetrating, loosening, and dispersing grease and oil if it is to do a fast and thorough cleaning job. This means that the cleaning material must have an alkaline content. It is possible to select certain alkaline salts for compounding a safe floor cleaner for cement, unpainted wood, or brick, which provide adequate alkalinity for the grease and oil content of the dirt, without reaching the stage of harmful action on these surfaces, or of being unpleasant or dangerous to handle. Moreover, in compounding these safe cleaners, it is also possible to incorporate ingredients which improve the wetting action of the cleaning solution, so that it penetrates faster and deeper into the dirt deposits and also insures materially better rinsing action. Any wet floor is slippery; and good rinsing qualities in a cleaner insure speedy drying off.

The basic principles of using a properly compounded cleaner are the same with either floor washing machines or manual methods. The solution is used over a limited area at a time—ordinarily about 40 to 50 sq.ft. Applied liberally over the surface, it is allowed to soak in for a few minutes and then brushed with a floor brush, or with the machine. It is sometimes necessary, where dirt deposits are heavy, to score the greasy surface of the deposits to insure speedier penetration. Very little heavy brushing is required on regularly cleaned floors. On long neglected areas considerable brushing and scrubbing are advisable to insure penetration and removal of embedded deposits; also, a somewhat more concentrated cleaning solution may be required than ordinarily, particularly if the floor is of wood.

Following the application of the cleaner solution, a thorough rinsing is given, using a hose where drainage is effective—or a brush or machine with plain water. It is not necessary to heat the cleaning solution, and cold water is sufficient for a good rinsing job; however, the warmer the rinse water, the faster the floor will dry.

WHERE FLOORS are painted, or where such surfaces as linoleum, cork, tile, or asphalt plastic and rubber composition have to be cleaned, it is not desirable to use an alkaline type of cleaner. Instead, the emulsifying and penetrating action of alkaline salts on grease and oily deposits must be substituted for by a suitable solvent action. An effective cleaner for such surfaces is based on a neutral soap, containing a suitable solvent and other ingredients for providing wetting and penetrating action.

This type of cleaner is applied in a concentration of about 1 oz. per gal. of water (either cold or hot) by machine or brush over an area of about 50 sq.ft. allowed to soak in a few minutes, and rinsed off thoroughly with cold water. The solvent soap type of cleaner is not, of course, suitable for grease or oil soaked floor surfaces on unfinished wooden or cement floors, except when accompanied by very heavy scouring and scrubbing action.

Both types of cleaners are frequently compounded with a refined pine oil, which imparts a deodorizing and antiseptic action to the cleaning operation. The pine oil acts also to prolong the life of such floors.

Proper application of a suitable cleaning compound will eliminate the slippage hazard, even on floors which have been accumulating grease deposits for twenty years or more. Once a dirty floor has been made clean, it is not difficult to keep it clean.

Fabric-Weight Determinations

At Interlaken Mills facilitated by use of self-calculating dies and templets

By LEONARD SHAPIRO

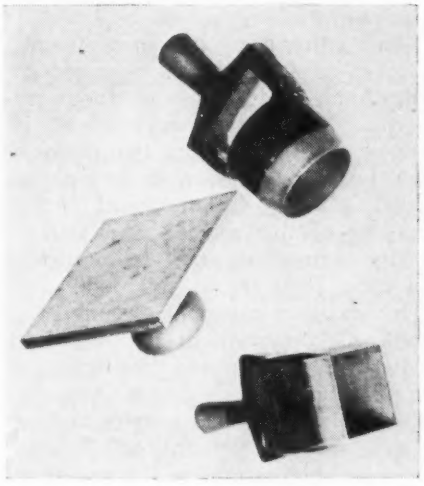
SQUARE-YARD WEIGHT DETERMINATIONS are among the most frequent operations carried out in a textile laboratory. Often specimens measuring 2x2 in. are used for the tests and five of these are weighed together. With this procedure, it is necessary to go through three steps: (1) record the actual weighing in grams or grains; (2) calculate the weight to ounces per square yard (e.g., by use of a chart, slide rule, etc.); and (3) record the computed value. In routine work, this is awkward, but if the first step (recording the actual weight) is omitted, it is not possible to check the computation at a future date. Furthermore, there are opportunities for errors.

At Interlaken's laboratories, these problems have been solved effectively by adjusting the size of the cutting die so that the weight in grams or grains is equal directly to the square-yard weight. In some cases the decimal has to be moved to the right or left, but this can be accomplished while recording weighings without involving an extra operation. Thus, instead of three opportunities for error, there is only one; i.e., in recording the weight.

The calculation of the dimensions of the cutting dies or templets is accomplished by means of the formulas shown in Table I.

Cutting dies may be either square or circular. The circular dies cut more easily; however, if the sample is to be resized and reweighed, there is a greater possibility of losing short threads. Best results are obtained by laying the cloth on a piece of cardboard on a wooden block. Cutting dies greater than 3 in. in diameter are difficult to handle, and steel templets are somewhat more convenient. The templet is held firmly on the cloth while the cloth is cut along the sides of the templet with a very sharp knife. The templets used at Interlaken have been made of ¼-in. steel plate with a heavy steel handle.

To replace the five 2-in. squares of the Federal and ASTM specifications, dies B or I listed in Table II may be used (G or O for circular dies). For small samples, where only one square can be punched out, dies C or H are used (F or N for circular dies). Where it is more convenient to use one sample over 20 sq. in., the templets D or L are used.



Square-cutting die, templet, and circular-cutting die.

A TOLERANCE for cutting dies must not be unreasonable, since an allowance must be made by the manufacturer for shrinkage during annealing. Shrinkage may not always be equal in both directions, and some error is introduced here. It may be shown that, for an allowable tolerance of 0.2% in weight (or area), the linear dimensions must be within 0.1% of the true value. For a small linear variation (dx), the change in area (dA) is computed as follows: $A = x^2$; $dA = 2xdx$; $dA \div A = 2xdx \div x^2 = 2dx \div x$. Thus, the per cent change in area is twice the per cent change in linear dimensions. This would correspond to an allowable tolerance of 0.002 in. on the 2 in. punches, 0.003 in. in the 3-in. punches, 0.01 in. on a 10-in. templet, etc.; and this seems to be a reasonable tolerance where accurate results are desired.

If one dimension of a cutting die is too large and another too small, the errors will counterbalance each other, and (for small variations) the average of the two dimensions may be used to determine the error in area.

With circular dies, the maximum and minimum diameters are measured and computed in very much the same manner.

For accurate determinations, the balance should weigh to a precision of 0.1%. Thus, for 0.5-oz. fabrics, if one cutting from dies C, H, F, or N is to be weighed, the balance should weigh to 0.5 milligram or 0.005 grain, and an analytical balance is preferable. For plant control work, where accuracy of 0.5% is adequate, triple-beam balances weighing in centigrams are suitable.

*Mr. Shapiro who is now research chemist for Warwick Chemical Co. was formerly director of laboratories of Interlaken Mills.

Table I. Formulas for calculating dimensions of dies.

	For Gram Scales	For Grain Scales
Square Dies	$\frac{ax^2}{10y} = \frac{1296}{28.35}$	$\frac{ax}{10y} = \frac{1296}{437.5}$
Circular Dies	$\frac{ax^2}{10y} = \frac{1296}{28.35} \times \frac{4}{\pi}$	$\frac{ax^2}{10y} = \frac{1296}{437.5} \times \frac{4}{\pi}$

x = side of square (or diameter of circular) in inches; y = number of places the decimal point is to be moved (plus if left, minus if right); a = number of squares to be weighed simultaneously.

Table II. Dimensions of dies and templets.

		Gram Scales				Grain Scales		
		a	y	x		a	y	x
Square Dies	A	1	−2	0.676	H	1	0	1.722
	B	5	0	3.023	I	5	1	2.434
	C	1	−1	2.138	J	3	1	3.142
	D	1	0	6.761	K	2	1	3.849
					L	1	1	5.443
					M	3	2	9.937
Circular Dies	G	5	0	3.412	N	1	0	1.942
	F	1	−1	2.413	O	5	1	2.746
	E	1	−2	0.763				

More Data on Infra-Red

Factors influencing amount of radiant heat imparted to textile being dried

By F. G. McGLAUGHLIN
Red Ray Mfg. Co.

A FEW QUESTIONS have presented themselves concerning the articles by S. L. Grapnel, "New Facts on Infra-Red Drying," in the August, 1943, issue of TEXTILE WORLD and "Infra-Red Drying of Textiles," in the August, 1943 issue of *Textile Research*, which it is the desire of the writer to answer. Having made laboratory tests on small pieces of goods with but one type of gas burner (Carbomatic Corp. burner), the author of the above-mentioned articles concludes by stating that further research should be carried out with actual industrial equipment and that continuous sheets of fabrics of considerable length ought to be used. With that suggestion this writer is in hearty accord. Small-scale tests with one particular burner are not necessarily indicative of the results to be obtained on full-size industrial equipment with other makes of burners.

To avoid erroneous conclusions on the part of the readers, it might be well to clarify several puzzling statements made by Mr. Grapnel. It was stated that in connection with a certain plush drying operation, 90 lamps of 1000 watts each were used and that approximately 12.5 lb. of moisture were removed per min. The calculations show that these lamps would develop 5110 B.t.u. per min. If we assumed that only 1,000 B.t.u. are required to evaporate 1 lb. of water at 100% efficiency (this means starting with a water temperature of 182° F.), then 12,500 B.t.u. were needed to evaporate 12.5 lb. as reported. The efficiency of the above operation is given as 41 %. Careful consideration of these figures shows that if 5110 B.t.u. were developed and an evaporating job requiring 12,500 B.t.u. were accomplished, the fantastic efficiency of 244% would be achieved. The writer rechecked the above application with TEXTILE WORLD (the magazine in which this application was originally described), and found that the 90 lamps, having an input of 5119 B.t.u. per min., instead of evaporating 12.5 lb. of water per min. actually accounted for 2.5 lb. of water per min. The efficiency of the lamps on this basis was 48.8%.

In another paragraph, in commenting on an article which appeared in the April, 1943, issue of *Industrial Gas*. Mr. Grapnel wrote: "—it is stated that the surface temperatures on the fabric dried were as high as 3000° F." Mr. Grapnel erred in the reading of this article, as it stated: "The burners maintain temperatures of from 2500° F. to over 3000° F." This was in a paragraph dealing only with the operation of the Red Ray Mfg. Co. burner and not with its application to cloth drying. Actually, the Red-Ray burner reaches surface temperatures as high as 2600° F. in an open-air application, and, when used inside a kiln or in a muffle furnace for welding operations, etc., temperatures in excess of 3000° F. have been recorded. It is also stated in Mr. Grapnel's article that a refractory temperature of over 2000° F. is improbable. This opinion is, no doubt, based on the operation of the burner used in the tests. In a recent test by the United States Testing Co. using Red-Ray Burners in the open and under no reflecting surfaces, a refractory temperature of 2600° F. was officially recorded.

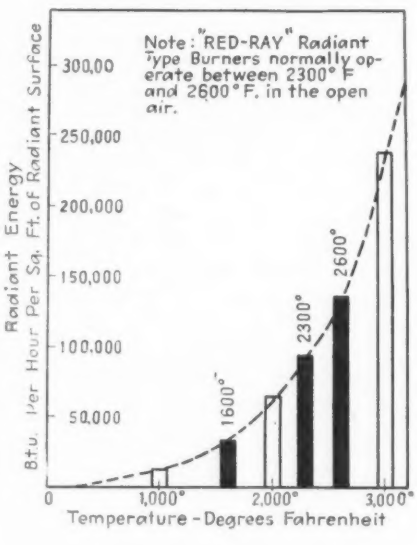


Chart showing approximate net amount of radiant heat transmitted to wet cloth per square foot of radiant surface at different temperatures. (Mean temperature of cloth 200°F.).

Mr. Grapnel also states that during his tests with the Carbomatic Corp. Burner, the refractory temperature never exceeded 1600° F. This fact explains his conclusions that the drying was accomplished by convected heat and not by radiant heat, for, according to Stefan and Boltzmann, the loss of energy from a body emitting full radiation (a so-called "black body") is proportional to the bounding surface (area) and to the fourth power of the absolute temperature. Expressed in B.t.u. per hr. per sq. ft. of surface, the radiant energy from such a body at a temperature of T° F. absolute is very nearly

$$1600 \left(\frac{T}{1000}\right)^4$$

1600 = Approximate constant for a black body derived from Mark's Handbook.

Very hot bodies, regardless of their physical characteristics, seem to emit heat at very nearly the above rate. At lower temperatures, the physical surface characteristics have an influence, but an incandescent surface is almost a perfect radiating body. In most cases, in addition to hot surfaces, cooler surfaces are present to absorb radiant heat. These surfaces in turn radiate at rates dependent upon their temperatures. The net effect is measured by the difference between the amount emitted by the hot body, and that returned by the cooler. The net transfer of heat in B.t.u. per hr. per sq. ft. is:

$$H = 1600\left[\left(\frac{T}{1000}\right)^4 - \left(\frac{t}{1000}\right)^4\right],$$

in which T = temperature of hot body in absolute degrees F., t = temperature of cooler body in absolute degrees F.

The above may be verified in combustion engineering handbooks.

It is therefore apparent that the quantity of heat wet cloth receives by radiation increases very rapidly as the temperature of the burner surface rises. As an example, a drop in temperature from 2500° F. to 2400° F. will reduce the amount of heat transferred by radiation by 12%. The accompanying graph shows the approximate net amount of radiant energy transmitted to wet cloth per square foot of radiant surface at different temperatures.

Summarizing, it can be said that the quantity of radiant heat imparted to the cloth to be dried depends: (1) on the difference of the fourth powers of the absolute temperatures of the cloth and burner surfaces; and (2) on the area of the incandescent surfaces utilized.

Finishing Worsted Barathea

By JAMES H. STONE

SEVERAL MILLS have experienced considerable difficulty in finishing barathea purchased by the Philadelphia Quartermaster Depot. The most serious trouble encountered is formation of wrinkles during finishing. The following routine, which was worked out by the writer, has been adopted recently in two plants and has eliminated the trouble.

First the pieces are inspected and sewn in the sewing department and are tacked fairly tight on a tacking machine. Next they are placed in the fulling mill, double. If a small mill is used, put in one piece on each side. If a large mill is used, put in four pieces—two on each side. Sew any pockets and soap up the goods quickly and evenly, but do not get them too wet. Change the bars every 10 min., and keep the pieces ballooning all the time while fulling. Use a good grade of soap. Generally, two weights are sufficient to give the required shrinkage. Fulling time will range from 20 min. to 1½ hr., depending on various factors. When the desired shrinkage has been obtained, the pieces are ready for scouring.

Proper scouring of barathea is essential. Put the goods in the washer with 3-in. pot eyes. Depending on its size, a washer will hold from four to six pieces. Sticks in the bottom rack should be as far apart as possible. Run in water to cover the goods and start washer with the gates closed. Do not have the water too hot—a temperature of 100° F. is high enough. Run the fabric in its own muck for 20 min. Open gates, and rinse a little to get out most of the muck, keeping enough water in the washer so that the goods will float all the time. Close gates and bring up a lather on the goods with their own soap. If a good lather does not come up, it is an indication that the pieces were rinsed too much and there is not enough soap. In this event, add enough soap to produce a good, rich lather. Scour for 20 min., and rinse until tests show the goods are clean. Always have enough water in the washer to keep the goods ballooning. If the goods do not balloon all the time, wrinkles will result. Cool off the pieces thoroughly before removing them from the washer, keeping them floating.

After the goods are removed from the washer, detach and run them over a vacuum extractor with the pump wide open. Make sure the pieces are free from wrinkles while they are being extracted. Dry to required width, inspect shear, press, semi-decate, perch, measure, wrap and pack as required in specification or invitation to bid.

Hints on Printing Napped Fabrics

By MALCOLM MACKAY

IN PRINTING FLANNELS or other fabrics after they have been given a full napping on one or both sides, there is great danger of streaks, snaps, drags, and stick-ins. Streaks are caused by loose nap catching under doctor blade edge and lifting the blade at that point. Snaps are caused by a fairly large piece of loose nap sticking in an engraved portion of the printing roller and consequently lifting the blade at that point on each revolution of the roller. Drags are caused by a slight caking of loose nap on the doctor blade edge, thus preventing a sharp and neat cleaning of the roller. Stick-ins are caused by very small pieces of loose nap becoming lodged in the engraving, which prevent color entering this part of the engraving and result in white spots in the printed figures.

One method of eliminating the troubles mentioned is to print the goods before napping. This method, although it eliminates the trouble from loose nap, is not at all satisfactory, as the napping after printing lifts some white nap in the colored portions of the cloth and causes a dulling of all shades. A second method involves the use of lint doctor blades. These blades have a tendency to run dry and the nap picked up by them builds up so fast that in a very few minutes it starts slipping under the blade and will be found to cause more trouble than it eliminates. A third method is the use of furnisher brushes. These brushes give fairly satisfactory results for a few hundred yards, but besides being very expensive require frequent cleaning as the brush will become filled with loose nap in a very short time.

Better than any of the methods listed above is the following procedure: First, give the goods a thorough brushing after napping to remove loose wads of nap and then a light starching, mangling, and tentering to cause the nap to lie close to the goods. Second, file the doctor blades with as short a bevel as possible for the type of engraving and slightly round the edge of blade with the stone; this slightly rounded edge will cause loose nap to pass under the blade rather than hang under the edge, as would be the case with a very sharp edge. Third, wrap the ends of the wooden furnisher that touch the printing roller beyond the edges of the white cloth in such a manner that the furnisher exerts practically no pressure on the portion of the roller that comes in contact with the white goods; this prevents the furnisher from pushing small pieces of loose nap into the engraving. Fourth, there should be no suction on the goods behind the printing machine and the face of the goods should touch no brushes or other objects that would tend to drag and lift the nap; as little tension as possible should be carried on the goods, as too much will cause a dragging on the tension bars and a consequent lifting of the nap. Fifth, keep the colors as thin as practicable and eliminate as much stickiness as possible; just before sending to the printing machine, add ½ gal. of denatured alcohol to 20 gal. of printing color; the alcohol makes the printing color slick and prevents the nap from sticking to it.

If this procedure is followed, there will be little trouble from streaks, snaps, drags, and stickins.

MANUAL OF MILITARY FABRICS

Part IX—No. 6 Cotton Duck, Type I

Manufacturing and processing details for numbered duck covered by Army Specification No. J.Q.D. No. 208C.

To meet the need by textile mills for complete data on gray constructions, yarn organizations, weaving, and finishing of fabrics required in large quantities for military use, TEXTILE WORLD, with the approval of officers of the Quartermaster Corps, began publication in the February issue of a Manual of Military Fabrics. The mill organizations and other manufacturing and processing data were furnished through the cooperation of textile mills which are producing these fabrics under Government contract. It is recognized that other plants having different types of equipment will have to make some modifications in the organizations, formulas, and procedures presented. Accordingly, these data should not be regarded as "standards" which must be followed, but as guides to the more efficient production of this fabric. Parts previously published are as follows: Part I, 5-oz. Poplin, Type H. P. Q. D. No. 1, February; Part II, 8-oz. Cotton Twill, Army Specification 6-311, March; Part III, 8.2 oz. Cotton Twill, Type I, Army Specification 6-201B, April; Part IV, 8.2-oz. Cotton Twill, Type II, Army Specification 6-201B, May; Part V, 8.5-oz. Herringbone Twill, Army Specification 6-261, June; Part VI, 8.2-oz. Cotton Twill, Type IV, Army Specification No. 6-201B, July; Part VII, 32-oz. Melton, Army Specification No. 8-53A, August; Part VIII, 9-oz. Sateen, P. Q. D. Specification No. 245D, September .

FOR USE IN MILITARY EQUIPMENT the Jeffersonville Depot requires large quantities of No. 6 cotton duck, Type I. This fabric is covered in tentative specification J.Q.D. No. 208C, issued August 3, 1943, superceding specification J.Q.D. 208B, issued June 8, 1943. Below is given a brief abstract of that part of Specification J.Q.D. 208C, which relates to the numbered ducks, followed by detailed information—not given in the specification—on the manufacture and processing of the fabric.

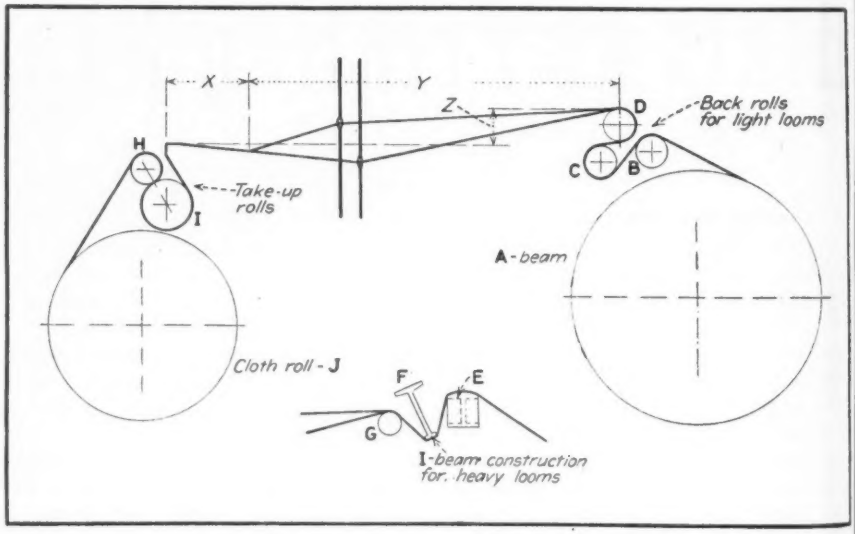
Abstract of Specification

Cotton: The cotton shall be of suitable length of staple and grade to meet the requirements of this specification.

Yarns: The cotton yarn shall be well carded, evenly spun and twisted. Warp and filling shall be plyed yarn.

Physical Requirements: The width of the goods called for shall be as specified with the following tolerances; up to and including 60 in. minus ¼ in., 61 to 120 in. minus ⅜ in. Any reasonable plus tolerances will be acceptable. Standard weight per linear yard shall be 13 oz. to 22 in., weight per square yard 20.74 oz. minimum; ends and picks minimum 36x26; breaking strength minimum, by 1x1x3 grab method shall be 335 lb. warp and 250 lb. filling. Weave shall be plain. Distance of selvage stripe from edge shall be 1¼ in. from edge—minimum ply shall be 3 for warp and filling. *Finishing*—The duck shall be finished as specified in the invitation for bids, and shall be woven without sizing. Use of finishing or loading materials to increase the weight or breaking strength is prohibited. Invitation for bids may require the omission of selvage stripe.

Inspection: Each yard of duck shall be thoroughly inspected and burled by passing it over a perch or equivalent process. *Acceptable Imperfections*—Defects not occurring, more than once every 15 yd. that can be allowed for (¼ yd. each) by string in the selvage are: Bad start ups, thick and thin places, drawbacks, warp and filling floats, misspicks, one filling thread missing, large slubs, kinky filling, light or mixed filling, small or washed out oil spots, and small holes of not more



Arrangement of letoff, harness motion, and take-up of C&K duck looms.

Characteristics of C & K Duck Looms (Figures in inches)

Type of Loom	*Diam. Beam*	*Diam. Back Rolls*			*I-Beam Construction*			*Diam. Take-Up Rolls*		*Diam. Cloth Roll*	*Distance Breast Beam To Fell*	*Distance Fell to Back Roll*	*Distance Cloth Level To Top Of Back Roll*
	A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*X*	*Y*	*Z*
D1	24 or 31½	3½	3½	4	....	..	...	6⅛	4 3/32	24	10 5/8	45 7/8	4 5/8
D2	31½	...	...	..	*1¼	6	1¼	5½	4½	24	8 7/16	44 3/8	6¾
D3	22 or 31½	...	...	..	†	7	3	4 15/16	4 5/16	19½	10 3/4	34 5/8	2 to 3¼
D4	22 or 31½	...	...	..	†	10	3	4 15/16	4 5/16	19½	10¾	33½	2 to 3¼
D5	22 or 31½	...	...	..	†	12	3	6	6	22	11 7/8	35	3 to 4⅛

* *Rolls supported by cast-iron cross girder.* *Note — No let-off rolls turn; all are held in a fixed position.* † *Cast-iron H-section.*

Mill Organization for No. 6 Cotton Duck, Type I

Opening and Blending Organization No. 7

Grade—Middling color, strict low leaf
Type—Western Growth
Staple—1 5/32 in.
Mix—12 bales
Processes—Blending feeder, blending feed table, vertical opener, No. 12 lattice opener and No. 11 condenser, hopper feeder

Picking Organization No. 7
17-oz. lap

One process

Type beaters:
3-blade back
Kirchner front

Beater Speeds:
1095 r.p.m. back
1088 r.p.m. front

Carding Organization No. 7
60-gr. sliver

444 r.p.m. lickerin (9 in. dia.)
163 r.p.m. cylinder
12 r.p.m. doffer
3 in. min. flats
50 in. dia. cylinder
27 in. dia. doffer
100 cylinder wire
110 doffer wire
110 flat wire
115.28 draft (waste deducted)
16.37 lb. per hr. pro.
7% waste

Main Settings:
0.012 in. feedplate to lickerin
0.007 in. lickerin to cylinder
0.007 in. doffer to cylinder
0.010 in. flats to cyl. Points 1-2-3
0.012 in. flats to cyl. Points 4-5
0.034 in. front plate
0.029 in. backplate (top)
0.029 in. backplate (bottom)

Drawing Organization No. 7
62-gr. sliver

366 r.p.m. F.R.
1⅛ dia. F.R.
5.81 draft

Type rolls:
Top: cork
Bottom: metallic

Roll Settings:
Back to 3rd; 1 1/16 in.
3rd to 2nd; 1⅜ in.
2nd to front; 1 1/16 in.

Roving Organization No. 9

Slubbers
5.90 draft
183 F.R. speed
1 1/16 in. dia.
.82 hank roving
1.1 twist

Roll Settings:
B-M: 1⅜ in.
M-F: 1 1/16 in.

Spinning Organization No. 13
7s yarn

.82 h. r.—single
8.54 draft
170 F.R. speed
1 in. dia. F.R.
4.70 twist multiple
Z Direction of twist
33 gr. traveler (weight 10)
2½ in. ring size
Warp bobbin type pkg.

Roll Settings:
B-M: 2⅛ in.
M-F: 1⅝ in.

Winding and Twisting Organization No. 4
7/3 warp yarn

Spooling:
Spool type pkg.
3 lb. per pkg.

Twisting:
7 yarn No.
3 ply
S Direction of twist
6.40 twist per inch
4½ in. ring (vertical)
No. 8 traveler (bronze)
100 F.R. speed
1½ in. dia. F.R.
Spool type pkg. (8x4)
1½ lb. per pkg.
(Twister spools creeled in beamer)

Winding and Twisting Organization No. 5
7/3 filling yarn

Spooling:
Spool type pkg.
3 lb. pkg.

Twisting:
7 yarn No.
3 ply
S Direction of twist
4½ twist per inch
4½ ring (vertical)
No. 8 traveler (bronze)
140 F.R. Speed
1½ dial F.R.

Winding and Quilling Organization No. 4

(Twister pkg. used—can be wound on large pkg.)

Quilling—(cop winder)
Cop type pkg. (metallic butt)
11 in. cop
8 oz. yarn per cop
1¾ in. Diameter
1¾ in. taper

Warping Organization No. 7

Beamer:
2600 yd. per set—1½ lb. twister spools
One beam per set
2162 ends per beam
Beamer type creel—3014 end capacity

Drawing-in and Weaving Organization No. 7

Drawing-in:
No. harness 2
1081 ends per harness
Double bar duck harness
12 length heddle
Duck type heddle

Weaving:
Gray: Oz. per linear yd. 35.46; lb. per yd. 2.216; width 60 in. Basis: 13 oz. to 22 in.
Warp ends per in. 36; picks per in. 26
Warp yarn ⅞; fill. yarn ⅞
Percent warp 63.03; percent filling 36.97
Selvage threads ⅞—One blue end 1¼ in. from selvage
Ends in selvage 4; Selvage draw; 2 per dent; 1 dent each selvage
Reed D/in. 11.66; Ends/dent 3
Reed spread 1¾ in.; No. harness 2
Ends per eye 1; Weave—plain
Patterns or straight draw—straight
Take-up warp 20%; take-up fill. 2.74%

Cloth Room Organization No. 7

No. inspections—One
Type inspections—In roll over lighted table
No. sides burled—None
No. Brushings—One
No. Shearings—None
Type Grading—In roll over table or perch
Folding—None
Finished yd. per cut—80 to 110
Total yd. per pkg.—80 or more.
Note: Two piece rolls not less than 25 yd. each up to 10% contract. One piece bolts not less than 35 yd. each up to 10% contract.

than ⅛ in. dia. Strings shall be allowed to remain in duck during finishing. *Unacceptable Imperfections*—Presence of the following imperfects in a piece of cloth will cause rejection: smashes, large or repeating oil spots, holes larger than ⅜ in. dia., continuous reed marks, torn or curled selvages, misdraws in excess of 1 yd., one or more warp threads missing, and two or more contiguous filling threads missing.

Tests

The methods of testing described in Federal Specification CCC-T-191a, wherever applicable, shall be followed.

Manufacturing Details

Yarn Manufacture: Yarns are made on standard carded-yarn equipment without special settings in speeds and feeds from picker through spinning except as given in the detailed specifications. Supplementary information not given in the specification follows: Middling cotton 1⅛ in. provides a satisfactory yarn of ample strength; however, with careful manufacturing, ⅞ in. staple might do. Three-ply 6.25s yarn for warp and filling is frequently used; however yarn sizes may vary from 6.25 to 7. Instead of a 3-ply yarn, a finer yarn with a heavier ply or a finer yarn with a heavier thread count finer than

(*Continued on page 138*)

Yarn Conveyors at May Hosiery

Deliver cones to knitters as needed, preventing unnecessary waste of time

By SHEPARD SCHWARTZ,
Engineer and Supervisor
May Hosiery Mills, Nashville, Tenn.

MAY HOSIERY MILLS' production of 50,000 doz. pairs of hose per week was accomplished only after working out the proper relation of men to machines. Even automatic machines require supervision and attention if maximum production is to be obtained. Operators' attention should not be distracted unnecessarily from the machines in their charge. Every minute spent in going from station to station, from machine aisle to supply room and back, in waiting in line at the supply room while others are being served, is a potential loss in production—a real loss in wasted labor.

Consider a problem which arose when the yarn-supply room was moved to the floor below the machines to make room for additional equipment, and to obtain space for storage of some 1,100 different colors, counts, and types of yarn. Our problem then consisted of getting yarn to the knitters at their machines in proper quantities and styles and getting it there when needed.

Assume a knitter runs 50 doz. pairs per day weighing 1 lb. per doz. and can conveniently carry in her arms from the supply room to her line of machines about 7 lb. per trip. She will make 7 trips of 3 min. or more each, thereby losing 20 min. per day from machine operation. At May Hosiery we have 150 knitters. A loss of 20 min. each means 50 hr. per week useless labor and a potential production loss.

The solution of the problem required provision for ordering out various styles of yarn; having the yarn delivered promptly to the knitters at the machines; and provision for returning partly used packages. At the same time it was important that both floor space and labor be conserved.

Trucking was one obvious solution, with perhaps one additional elevator and some communication system between the knitter and the supply clerk. This plan was investigated carefully, but finally was discarded in favor of a conveyor system. The system contained several novel features, very few drawbacks. It now has been in successful operation long enough for knitters and management to appreciate its advantages and to develop patience for its shortcomings.

AISLE NO._____ **OPERATOR NO._____**

No. Cones	Count	Kind	Color

Fig. 1. Requisition form for yarn made out by the knitters.

THE SYSTEM WORKS AS FOLLOWS: When a knitter anticipates the need of additional yarn or a different yarn for a new construction, she indicates her requirements on a simple form (Fig. 1), giving in writing all the necessary data. Since this is a written requisition, the likelihood of misunderstanding or other errors is minimized. This form is placed on the conveyor and goes immediately to the yarn-supply room. The supply clerk promptly assembles the order, places it on the conveyor, presses a button corresponding to the station from which the requisition was received, then turns to the next order. Orders are filled in rotation. The pressing of the button starts the conveyor, automatically sounds a signal warning in the section served by this delivery station that the material is on the way, and flashes a signal light on the particular aisle for which the yarn is destined. The knitters on all aisles look up at sound of the audible signal and the operator on the aisle for which the yarn is intended gets the flash signal and meets the yarn at the delivery station.

There are three delivery stations centrally located for the aisles they serve. The audible signals are in three distinct tones, one for each station. The knitters soon become accustomed

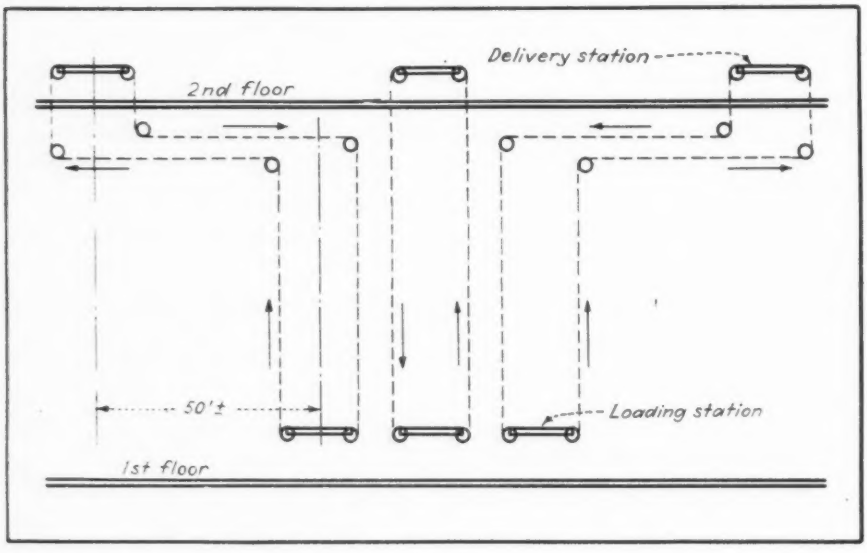


Fig. 2. Diagrammatic sketch of conveyor arrangement, showing loading station located in supply room and three delivery stations on floor above.

to the difference in the sound of these signals, and no confusion has resulted in the arrangement. To serve the three stations, there are three separate conveyors operating from one loading station in the supply room on the floor below the knitting machines. One of these conveyors is quite simple, being in the form of a continuous loop from the loading station below, up to delivery station directly overhead, and back, The other two require horizontal runs of from 40 to 50 ft. on the ceiling of the lower story, then a loop up to the floor above, one running in each direction from the loading station. The general layout is shown diagrammatically in Fig. 2.

Cones of yarn are carried on spindles attached to the side bars of a Link-Belt. No. S5155 roller chain, modified to suit this particular purpose by substitution of a special bearing pin with brackets attached at the ends to which the spindles are welded.

The spindles, being free to rotate, maintain a vertical position regardless of the direction of travel. A cross-section of this arrangement is shown in Fig. 3. The roller is in contact with a steel flat screwed to an oak stringer on all horizontal runs. No track is required for vertical runs, as will be noticed from Fig. 4. Large-diameter sprockets are used at all bends or corners where direction of travel changes. A delivery station is shown in Fig. 5.

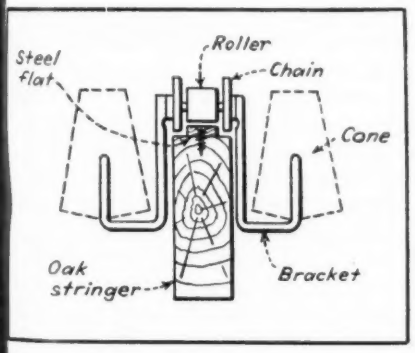


Fig. 3. Detailed cross-section of roller chain and spindles for cones.

SIGNALS AND CONTROLS. At the loading station there is a push-button relay for starting the conveyor; for each delivery station, there is another button, which the supply clerk pushes to indicate to the knitters the aisle for which the material is intended. The latter button flashes the signal light. There is a third system consisting of a push-button for each delivery station and a light at this particular point. When the supply clerk pushes this button, and the light at the delivery point comes on, the knitter understands that the conveyor must be unloaded immediately and returned to the loading station. This speeds up delivery of other orders which might be waiting.

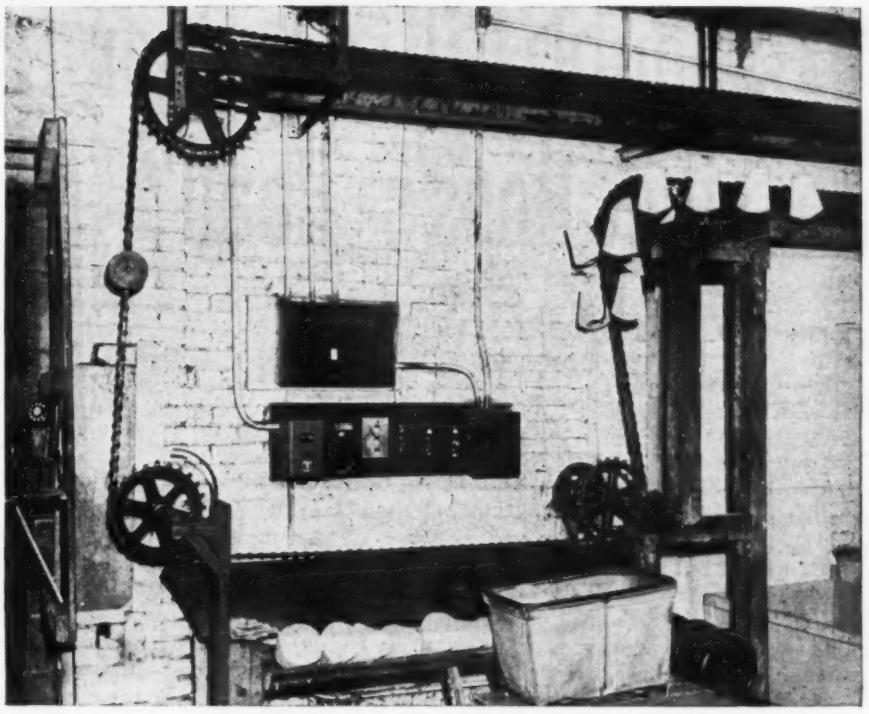


Fig. 4. View of loading station for one of the horizontal-run conveyors. Note control panel mounted on wall.

In the interest of safety, only the knitter starts the conveyor back on its return trip and only the supply clerk can dispatch it from the loading station. There is an emergency control, however, which permits operation at any time from the delivery station if necessary. When the conveyor is loaded and started from the loading station, it automatically stops at the delivery station, or vice-versa.

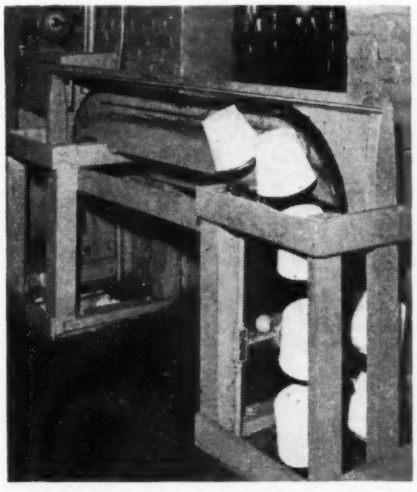


Fig. 5. View of delivery station with yarn traveling into position for unloading.

General Electric 220-volt, 1200 r.p.m. motors are used in connection with Foote Bros. Gear & Machine Corp. speed reducers. The vertical run requires a ½-hp. motor and travels at 60 ft. per min. Each of the two horizontal runs requires a 2-hp. motor and travels at 120 ft. per min.

At the time the conveyor was installed a system of information was developed to prevent loss of time due to failure of supplies when needed. The general storage warehouse is located several miles from the plant, and deliveries can be made only in conformity to Government regulations. In the yarn-supply room at the mill a minimum 24-hr. reserve supply is kept on each item being run. When this final stock is opened, the yarn-supply clerk notifies the management and an additional supply is ordered from the warehouse. If the particular style is not in stock at the warehouse, a ticket marked "Out-of-Yarn" is posted on the bin in the supply room where this yarn is stocked. At the same time the knitting foreman is notified so that he can make arrangements to change over to another style by the time the 24-hr. supply is exhausted. The ticket remains on the bin until a new supply is received, when it is returned to the manager. The knitting foreman is then advised that he is free to resume operations on the original work.

Should Bill Go Over the Boss's Head?

The QUESTION—

DEAR MR. BRADFORD:

I am a young man of two years' practical experience. At present I am assistant to an overseer in a large spinning mill. My boss grew up with the company and his job grew with it. His department has always been moderately successful, and as a consequence he seems suspicious of, if not hostile to, any suggestions which might overturn the traditional methods by which he has run it.

Having been educated at a textile school, and having had two years' training with a small but aggressive spinning mill, I've been taught that business methods which tend to follow a rut become increasingly ineffective. I can say without malice that during the last year my boss has overlooked and lost hundreds of dollars he might have saved for the company had he been willing to make a few changes which I have suggested. And I am confident I could show the mill company how it could strengthen and improve our department if these changes were adopted.

But there's an old rule: Never go over the boss's head. You are guilty of disloyalty if you do.

But am I not guilty of greater disloyalty if I don't?

BILL DUNCAN

The ANSWER—by DON BRADFORD

EVERY SUCCESSFUL MILL that I know welcomes and rewards new ideas. Occasionally, of course, there are bosses who, because of selfishness, either throw away good ideas of subordinates or boldly take credit for them. Every boss of this kind should be weeded out. There are a few bosses, whom I have met in coming up from the ranks, who have turned down good ideas just because they came from men in the shops or mills who weren't of overseer rank. And too, I have seen overseers and superintendents grab a helpful suggestion from a man under them, put the new idea into effect and never give the man who thought of it a raise or a reward, or even a thank you.

I have never yet known a man to be fired for having a good idea, or for finding a better way to do his job. But I have seen a few ambitious young men get their fingers burned because they tried to run the other fellow's job. In most companies you won't get far if you try to go over your immediate boss's head. You'll be told, "Go back and see the right man." The first rule is: Follow the line of organization. The superintendent or general manager hasn't time to pass on all suggestions. He depends on men under him to do it.

The young man, Bill, who wrote this letter will find that his big problem is to put his idea over—to convince his boss that his suggestions are indispensable. If he can't do that, the chances are he won't be able to convince the man above the boss.

How then should he go about it?

First of all you should use tact. I have seen men come bounding from textile schools or other jobs, full of ideas, eager to change things, anxious to make an impression on the big boss, but they only cracked up against a stone wall simply because they tactlessly let their enthusiasm and desire for self-advertisement run away with them. Don't be a "know it all" fellow one who tries to thrust himself into the limelight over the heads of others. You will not only make yourself offensive to the boss, but to the others who work with you. To command respect and get attention, master your own job first and show consideration for others.

Good ideas may even come from the sweeper.

Your attitude toward your boss should be one of loyalty and cooperation; this will give you the ability to be tactful. If you regard your boss as one who is trying to keep you down and throwing cold water on your suggestions, he is likely to detect antagonism that will destroy his confidence in you. If you first let your boss know that you want to assist him in promoting the interests of the company, you will usually find him more than willing to give your ideas due consideration.

Be patient. Don't be in too big a hurry for the boss to act on your suggestions. Remember if the idea is important enough, the boss must sell it to somebody higher up before he can put it into effect. He may have to bring it before the board, and search out possible flaws, before he commits himself. Quite often young men become impatient with the routine of modern business organization. Most large mills, because of their complexity, are run on semi-military lines. The president or chief officer, like the general in the army, must divide and subdivide authority.

We're all looking for good ideas nowadays. They may come from the sweeper or the cleaner. If they are good they should be accepted and put into use, and due credit given the man who suggested them.

The best advice I can give Bill, and other young men like him, is this: Be patient and tactful, don't try to offer trivial suggestions just for self-advertisement. But if you have a good idea and believe it good, take the matter up with your immediate boss. If he is not selfish, you can be fairly sure that your idea will be recognized, without going over anybody's head.

EDITOR'S NOTE: Don Bradford's advice to Bill is good common sense. In every organization of any size, certain channels of responsibility must be followed. Otherwise there is no organization. . . . However, there is another angle to this. Many companies, realizing that good ideas were probably going to waste in the minds of the rank and file, have set up Suggestion Boxes with a special committee to consider and decide upon the value of the suggestions received. If Bill worked in a plant employing this method, he should try first to get his idea across through his immediate boss, but if he finds a dead-end street there, the Suggestion Box offers him a detour.

In Full-Fashioned Hosiery Mills

Temperature and humidity requirements have changed due to use of new fibers

FULL-FASHIONED HOSIERY MANUFACTURERS, because of several comparatively recent developments, are giving more and more attention to the regulation of humidities and temperatures in their mills. The changes from silk, to Nylon, to rayon, and the further changes in types of hosiery yarns expected in the immediate post-war era have influenced this thinking. Another factor has been the trend toward windowless buildings. Still another is the greater stress being placed on the comfort and efficiency of workers. Fifteen years ago few full-fashioned mills had installed air conditioning equipment. Those companies which pioneered in such installations began reaping the benefits. As the importance of air-conditioning became more widely recognized, other companies made installations, and today a large number of mills have air-conditioning equipment of one type or another in one or more departments.

There was considerable question at one time as to whether installation of humidifying equipment was justified or desirable in full-fashioned mills knitting silk hosiery. It was found, however, that by maintaining a relative humidity of about 65% in the knitting department, it was possible to decrease seconds from 3 to 4% or even more, produce better hosiery of more uniform lengths, and reduce needle breakage. Maintenance of a somewhat lower, but uniform, relative humidity in the finishing department proved advantageous also. In the throwing department humidities about the same as or a little lower than in the knitting department were suitable.

In manufacturing Nylon hosiery a much lower relative humidity was required for best results. Thus, for throwing Nylon hosiery yarn a relative humidity of 45% at 80°F. to 50% r.h. at 85°F. was most satisfactory, and in the knitting room a relative humidity of about 48% (at 80°F.) was desirable.

For knitting cotton hosiery the relative humidity should be at least 60% and, preferably, somewhat higher.

For knitting rayon hosiery still other conditions are necessary. With viscose or cuprammonium yarn, too high a humidity is likely to result in overstretching of the yarn, and too low a humidity is likely to result in broken filaments and irregular stitches. For throwing viscose and cuprammonium rayon hosiery yarns a relative humidity of about 55% is the most suitable; and for knitting, 60 to 70%.

CLOSE REGULATION OF TEMPERATURE is important in the knitting department. The conventional full-fashioned machine is a large, intricate piece of equipment, and any sudden variation in temperature will throw it out of adjustment and may even cause a smash-up, necessitating a costly shutdown and repairs. The narrowing mechanism is particularly susceptible to changes in temperature. Thus, if the various parts of this mechanism are not uniform in temperature, narrowing holes are likely to result. If the needles and points appear to be out of line and are pliered while there are variations in temperature between the parts, they will again get out of line when the temperature becomes uniform and will have to be re-pliered.

Frequently, the temperature in the knitting department is allowed to fall during week-ends or holidays. In this event, the heat should be turned on several hours before the machines are started to permit them to warm up thoroughly and evenly.

In the seaming, looping, and finishing departments there is less need for temperature control, except for the fact that fairly uniform temperatures add to the comfort and efficiency of the workers.

Even today some plants do not have equipment for regulating the temperature, attempting to do this by opening and closing windows and turning radiators off and on by hand as the temperature changes. Mills in those locations where there are no extreme variations in temperature may be able to "get away" with this procedure, but at the expense of quality and extra cost for fixing.

Several different systems are available for heating and humidifying hosiery mills. These include radiators or steam coils plus humidifiers; unit heaters plus humidifiers; and central station air conditioning systems combining heating, humidifying, and sometimes cooling.

Among the factors which have governed the choice of a particular system in the past are the size, layout, and location of the mill. In view of the fact that Nylon, Vinyon, high-tenacity rayons, and other synthetics—each requiring different atmospheric conditions from the others—will be available to the full-fashioned hosiery industry immediately after the war, it is apparent that air-conditioning equipment should be sufficiently flexible to maintain relative humidities and temperatures at any point over a fairly wide range.

For throwing acetate rayon hosiery yarns relative humidities of 50% at 80°F. to 55% at 88°F. are recommended; and for knitting, a relative humidity of 55% at 85°F. Many mills maintain a relative humidity of about 65%, but this is considerably higher than is necessary. On the other hand, if the relative humidity falls below 50%, static may occur.

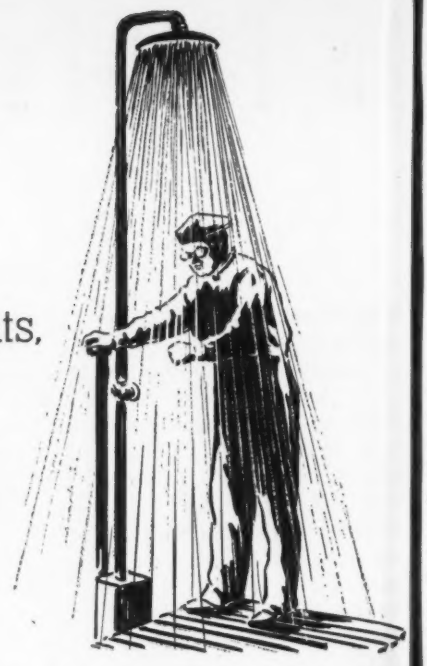
Relative humidities recommended for throwing and knitting various types of hosiery yarns.

	Throwing	*Knitting*
Silk	**60 to 65%**	**65%**
Nylon	**45 to 50% at 80 to 85°F.**	**48% at 80°F.**
Cotton	———	**60% or higher**
Viscose and Cuprammonium Rayon	**55%**	**60 to 70%**
Acetate Rayon	**50% at 80°F. to 55% at 88°F.**	**55% at 85°F.**

This article is based on information furnished by Edward J. Macuch, supplemented by data obtained from other sources.

How to Handle Chemicals Safely

Precautions needed with bleaching agents, chlorates, perchlorates, and acetic acid



Flood type emergency shower made up of 1¼- or 1½-in. pipe and equipped with quick-opening valve operates when worker steps on platform, deluging him with water.

TO AID IN THE PREVENTION OF ACCIDENTS, the National Safety Council has issued a series of safe practice pamphlets and data sheets describing proper procedures for handling various chemicals. Abstracts of the Council's publications on safe handling of caustic soda and chlorine appeared in our September issue. Below are outlined the methods recommended for handling bleaching compounds, chlorates and perchlorates, and acetic acid.

BLEACHING COMPOUNDS

Hazards—

Sodium hypochlorite, hydrogen peroxide, and sodium peroxide are the bleaching agents most commonly encountered in the textile industry. The hazards with these compounds are chemical burns through contact of the substance with the skin or eyes; dermatoses; chlorine gas poisoning; fire and explosion; and scalding due to the temperature of the bleaching solution.

Sodium hypochlorite may cause a dermatitis in the form of small blisters, particularly on the backs of the hands and in between the fingers unless handled with extreme care.

Concentrated hydrogen peroxide will cause destruction or shedding of the finger nails, and careless exposure to the less concentrated 100 volume (30%) solution may have the same effect. The hair of the head, face, and body may also be bleached if hydrogen peroxide solutions are not handled carefully.

Sodium peroxide is a skin irritant, and it will also affect the mucous membranes. The dust rising from the mixing operations must be guarded against, since, if it settles on the skin, burns (skin irritations) will follow. Hot solutions will also cause burns both because of the temperature of the solution and because of its chemical action. The powder should be stored in a cool, dry place. Moisture will cause the generation of heat, creating a fire hazard; it is important to keep the substance absolutely dry.

Precautions—

There are certain general safety precautions that apply to the three bleaching agents. In the suggestions given in the following paragraphs, unless a specific chemical is mentioned, they may be considered as common to all three.

1. Only thoroughly trained workers, familiar with the hazards of the work, should be permitted to handle, mix, or use these bleaching agents.

2. Personal protective equipment —comprising acid-proof goggles, face shields, rubber aprons, rubber gloves, rubber or otherwise waterproof footwear, shirts with long sleeves, and hats—should be worn by men handling, mixing, or using bleaching agents wherever there is a hazard of the solution splashing. Rubber boots equipped with "non-skid" soles are worn in many plants to avoid slipping hazards.

3. Flood-type emergency showers should be installed at locations convenient to the bleaching operations. The shower should be actuated by the worker stepping on the platform or by a pull chain. A copious supply of water should be discharged that will flush away the chemicals from the man's clothing and body.

4. An inverted faucet or bubbler-type fountain should be available for washing chemicals from eyes.

5. Wherever practicable, the mixing of process solutions, from the concentrated chemicals, should be done in a closed system. Particular care should be taken in the case of sodium peroxide to prevent the dust from escaping into the workroom air.

6. When removing concentrated liquid solutions from carboys, care should be taken not to break the carboy or spill or splash the chemical.

7. Certain persons are unusually sensitive to even mild solutions of these bleaching agents. Wherever dermatitis or other unusual physiological disturbances occur, the worker should be referred to a competent physician for treatment. If it is evident that the man is hypersensitive to these solutions, he should be transferred to work free from the exposure.

8. There is danger that chlorine gas will be liberated during the preparation of sodium hypochlorite. For this reason, chlorine gas masks should be available for use in emergencies. These masks, however, should not be used if the concentration of chlorine is over 2%. Air-line respirators should then be used, or if they are not available, the workroom should be thoroughly ventilated before the men are permitted to enter. Ammonia, sprayed into the air contaminated with chlorine gas, will quickly neutralize it. It is general practice in most plants to install chlorine gas cylinders outside the main building or in a separate ventilated enclosure. An emergency shut-off in the main feed line is provided so that there will be some means of stopping the flow of gas in case of accident.

9. In some plants, dyeing and bleaching are done in the same room, and the waste products of the operations are pumped into the same sewer line. Where this condition exists, care should be taken not to allow chlorine solutions and acid solutions to be pumped into the sewer at the same time. Chlorine gas may otherwise be liberated.

Treatment—

1. The first rule for first aid where bleaching solutions have splashed on men is to flush the chemicals from the body with copious quantities of water. It is important that this be done at once. Men should not wait until the chemical has started to burn the skin. Following the use of liberal quantities of water, the neutralizing solution may be used if it seems necessary. The victim should be sent to the first-aid department or to a doctor for further treatment. In all cases where a bleaching compound has entered the eyes of a workman, he should be sent to a doctor.

2. Sodium Hypochlorite. Sodium hypochlorite can be neutralized by mild acid solutions. Domestic vinegar or dilute acetic acid is effective.

3. Hydrogen Peroxide. 100 volume (30%) hydrogen peroxide should be flushed from the skin or the eyes, and the victim referred to the first-aid department for treatment.

4. Sodium Peroxide. It is very important, in flushing this material from the skin, that water be applied liberally. Again, mild acetic acid solution will help to neutralize the material, which should be followed by bathing with water.

CHLORATES AND PERCHLORATES

Hazards—

Chlorates and perchlorates are hazardous because of the quantity of oxygen they liberate when heated. They also form explosive mixtures with sulphur, starch, sweepings, dust, or other organic materials, and also with sulphuric acid, phosphorus, or antimony sulphide. They may be detonated and exploded by percussion or friction. Perchlorates when contaminated with oil or grease, will detonate on shock. Another danger is that when working with chlorates and perchlorates the clothing may become impregnated and then burst into flames easily because of friction or nearby heat.

Precautions—

Chlorates and perchlorates are usually stored in wood boxes, kegs, and small barrels, lined with heavy brown manila paper, or placed in close woven burlaps or cheese-cloth sacks and packed in one of the above containers. This is to prevent the crystals from falling through the cracks frequently found in wooden containers.

1. Repairs to damaged containers should not be made in storage buildings. All discarded wooden containers should be destroyed by burning and should not be used as containers for other articles. If destroyed by burning, they preferably should not be broken up, but should be placed whole upon the fire. However, if they are first broken to pieces, this should be done out of doors.

2. Whenever it becomes necessary to store large quantities of chlorates and perchlorates, great care should be exercised in the selection of a proper type and location of building. The building should be cool, dust-free, and of fire-resistant construction and should be located in a field where there is no possibility of fire communicating with other buildings. These materials should never be stored in a building with other chemicals.

3. Containers should never be allowed to become wet due to a leaky roof while in storage or from exposure to weather. All chlorates are soluble in water. The water solution impregnates the wood of the container. After the water is evaporated, fine crystals of the chlorates will be found on the sides and bottom of container. This makes the container dangerous to handle because of the possibility of starting a fire from friction created by scraping the container along the floor.

4. Chlorates and perchlorates should be transported from storage to the point of consumption in the smallest quantities that are practicable. They should be handled in buckets with glazed surfaces and tight covers somewhat similar to some types of milk pails, so as to prevent spillage.

5. The contents of damaged boxes and barrels should be immediately transferred to good concontainers so that contents will not spill over the floor while transferring the materials from one point to another.

6. Workers who handle chlorates and perchlorates should be provided with and required to wear special protective clothing. This special clothing, as well as the containers used for handling the materials, should be kept in the storage building when not in use. Under no conditions should they be allowed to remain in other buildings.

7. Men handling chlorates and perchlorates should be thoroughly instructed as to their nature and the danger of rough handling.

ACETIC ACID

Hazards—

Inhalation of acetic acid vapors irritates the membranes of the nose and throat and respiratory organs. The vapors have an irritant action on the membranes of the eyes and on the skin. If acetic acid is swallowed, there is a burning taste in the mouth and esophagus, followed by pain in the stomach which may extend over the entire abdomen. In serious cases, vomiting occurs and there is labored, noisy breathing, coughing, then collapse. Death may follow within 48 hr. Glacial acetic acid, in contact with the skin, causes blisters.

Precautions—

1. Acetic acid should not be stored where it will come in contact with sodium peroxide or chromic or nitric acids.

2. Strong acid should be used only in closed systems or in equipment provided with adequate exhaust which will not draw vapors past the face of operators.

3. Workers should be provided with and required to wear respiratory protective equipment and personal protective clothing, such as rubber goggles, rubber gloves, rubber aprons, and rubber boots.

4. The eating or storing of food in acid processing or storage rooms should be strictly prohibited.

Treatment—

If acetic acid has been swallowed, an emetic, such as a weak solution of sodium bicarbonate, should be given to induce vomiting, and the services of a physician should be promptly obtained. In case glacial acetic acid or a strong concentration of ordinary acetic acid is spilled on the skin, it should be washed off with plenty of clean, fresh water. In all cases of acetic acid poisoning, it is best to obtain the services of a physician.

Making It Stick

Adhesives required for lining shuttles, attaching labels, and other mill uses

By GERARD B. CLORAN

National Adhesives Division
National Starch Products, Inc.

REQUIREMENTS OF THE TEXTILE INDUSTRY for adhesives are, for the most part, highly specialized. Among the applications are for lining shuttles with fur, attaching labels to hosiery, labeling of boxes, backing of carpets, and flock printing. Types of adhesives employed include fish glue, lacquer types, dextrin derivatives, and rubber cements. Below are discussed some of the more common applications and type of adhesive recommended for each. For other similar applications the same recommendations hold.

For lining shuttles with fur, fish glue was used widely in the past. However, the scarcity of fish glue, which followed the outbreak of the war, led to the development of moisture-proof lacquer types of adhesives, and these have been found to be better suited to the requirement.

Many hosiery manufacturers require an adhesive to attach their brand labels to the hose. In this application, only a superficial bond is desired. If the adhesive penetrates the fabric or anchors too securely on the fibers, the hose is likely to be damaged when the ultimate consumer removes the label. Accordingly, a thin concentrated film of a remoistening gum which does not "wet" in damp weather is preferred. Labeling of sheets, pillow cases, etc., may be similarly handled.

Labeling of hosiery boxes presents a problem for which there is no broad recommendation, since the adhesive selection depends upon the character of the box wrapper to which the label is applied. The safest procedure in this instance is to send samples of each different type of box wrap used, along with a few labels and a description of the gluing method, to the company from which the adhesives are purchased. Laboratory tests to determine the proper grade of adhesive for the job can then be made.

Some carpets, instead of having sewed or tacked seams, are bonded to a fabric backing. A non-staining, fast-setting flexible lacquer which is shampoo-proof is recommended. A similar lacquer may be used for attaching fabric labels to the backs of rugs. Grades employed for such work must remain permanently flexible and should withstand dry-cleaning.

In printing certain rayon and acetate fabrics, such as taffetas and satins, an adhesive is applied to the back-gray to grip the cloth and hold it rigid and to its full width, so that it receives a uniform impression when it comes in contact with the print rollers. The adhesive should provide the desirable degree of immediate tack and wash out readily in the soaping operation. A fairly high water-taking, cold-water-swelling, dry adhesive is generally preferred for this purpose.

Adhesives used in flock printing vary in types and properties, depending upon the material printed, the fastness requirements of the flock, and—today—upon availability. High adhesive power and permanent flexibility are basic requirements; and, for that reason, synthetic resins, lacquers, and rubber cements have been employed. Controlled penetration is important when the adhesive must not strike through to the back of the fabric. Resistance to dry-cleaning is sometimes required.

Nearly all mills use adhesives in the shipping departments for sealing and labeling corrugated and solid fiber cases. Much of this work is now done under Government specifications, which require adhesives of particular types. For example, a lacquer-type adhesive for applying and over-coating labels is called for under Specification OQMG-94A, and a highly water-resistant adhesive for sealing Victory (weatherproof) cases. Grades capable of withstanding water immersion for 48 hr. are most commonly used, and Specifications 100-14A, 39P16A, and OQMG-93 are frequently applied to this work. These sealing adhesives should be capable of properly anchoring on the highly resistant stock and setting with reasonable rapidity, whether applied by hand or machine. When ordering adhesives to be used in connection with the filling of Government orders, the packing specifications prescribed in the contract should be indicated.

For sealing and labeling ordinary shipping cases (not for export) where no Government specifications are involved, light colored, moderately water-resistant vegetable adhesives can be used.

Some mills manufacture their own paperboard tubes on which the fabrics are wound. Since these tubes are rather long and must support considerable weight, the adhesive used to wind them should dry hard but not brittle. Tube winding adhesives most commonly used today are made from vegetable dextrin bases and are supplied in liquid form.

Secrets from Germany

NEWS OF THREE DEVELOPMENTS in the manufacture and processing of textiles in Germany for military use has recently been brought to this country by refugees. These developments are production of synthetic fibers from seaweed, manufacture of parachute shroud lines from "mussel silk," and finishing of fabrics to render them insect-repellent.

The synthetic fibers produced from seaweed are believed to be similar to the alginate fibers developed by Speakman in England, and used experimentally in this country for garnishing camouflage nets and other purposes. It is stated that in Germany 25% of seaweed fiber is being blended with 75% reworked wool for uniforms and civilian fabrics.

"Mussel silk" is made from tufts of fibers by means of which certain varieties of large mussels attach themselves to rocks. This fiber, which was used by the ancient Greeks in manufacture of textiles, is said to have approximately the same tensile strength as real silk. After washing and carding, the fibers are spun into yarns and twisted into cords.

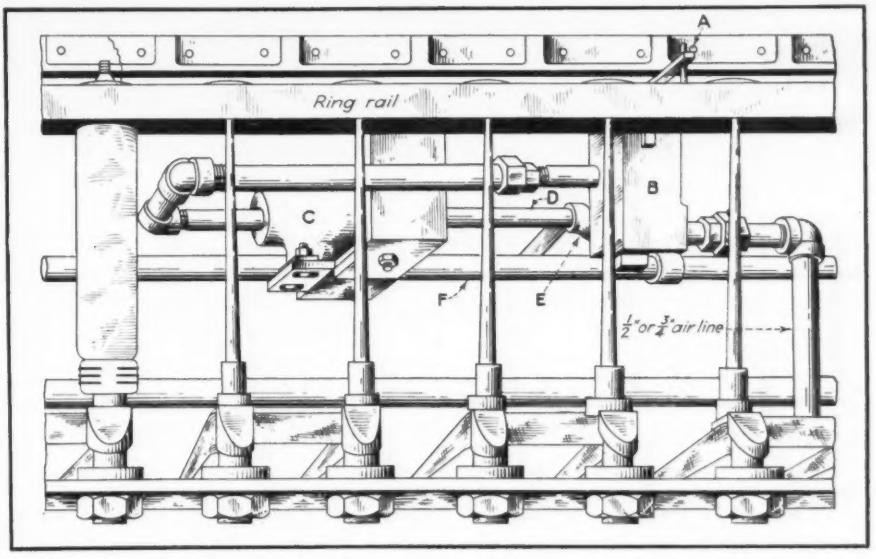
Finishing of uniform and underwear fabrics to render them insect repellent is carried out by treating them with a vegetable tanning material obtained from birch trees. The material has a lasting aromatic odor which repels insects. It is reported that German soldiers in Libya were furnished with uniforms and underwear made from fabrics finished with this material.

TEXTILE EQUIPMENT NEWS

Pneumatic Stop-Motion For Frames

Designed for use on spinning frames and twisting frames, is a pneumatic stop-motion which automatically stops the frame when the bobbins have reached a predetermined size. This stop-motion, manufactured by Ernest F. Culbreath Co., Charlotte 1, N. C., prevents waste caused by overrunning bobbins and consequent sloughing of such bobbins during weaving.

The O. B. Pneumatic Stop-Motion may be applied to either direct motor or belt driven frames. It consists of an air valve lever *A* which is placed above the ring rail and the height of this lever above the rail determines the size of the bobbin produced. As the bobbin builds-up, the ring rail eventually trips the air valve lever *A*, which opens a valve *B* that is connected to the compressed air line. Air then flows to the cylinder *C* where it forces the piston rod *D* outward, stopping the frame. The rod *D* has attached to its end a cross rod *E* that connects it to the shipper rod *F*. Once set, this device will stop the frame when it is ready to be doffed.



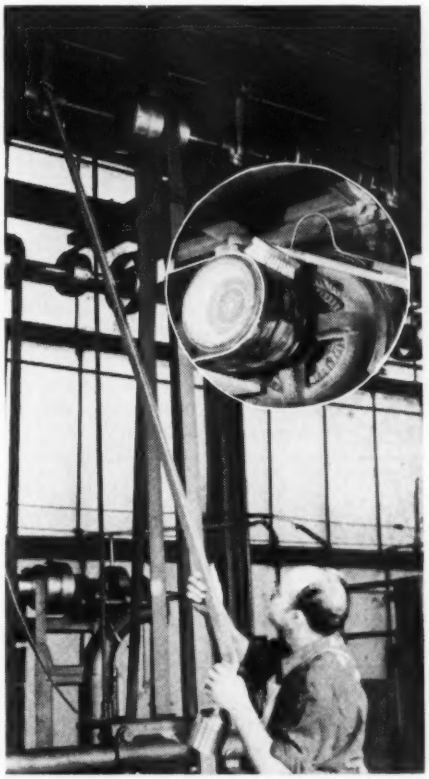
A pneumatic stop-motion for spinning frames and twisters (Culbreath)

Oiling Equipment For Bearings and Belts

Mills equipped with overhead shafting and group drives offer injury hazard to those employees that must oil shaft-hanger bearings and dress the belt of the main driving motor. Two pieces of equipment, announced by Du-Grip Mfg. Co., Toledo, Ohio, permit these operations to be carried out with speed and safety.

The "Long Short" oiler consists of a long arm about nine feet in length with a plunger type of oil can attached to the bottom. A brass tubing leads from the oil can to a nozzle at the other end of the tube. After inserting the nozzle in the oil hole or oil cup of the bearing the amount of oil added may be metered. A special attachment at the oiler head permits practically any type of oil cup to be opened and filled. The "Long Short" oiler is collapsible and the operator is protected from electrical contact by synthetic rubber insulation at the joint.

A "Longshort" belt oiler, also produced by this company, possesses the same advantages as the bearing oiler, namely, that of eliminating the use of a ladder. This type of oiler consists of a brush being attached to the end of the arm, instead of a nozzle, and the oil line leads to the brush. This brush may be used for cleaning the belt surface and also for oiling it while in operation. It is stated that the use of these devices materially cuts the time required for oiling and dressing overhead drives in mills.



"Long Short" bearing oiler used for shaft-hanger bearings (Insert) "Long-short" belt oiler (Du Grip)

Process for Surface Hardening Stainless Steel Parts

Surface hardening of stainless steel parts is made possible by a new process announced recently by Industrial Steels, Inc., 250 Bent St., Cambridge, Mass. The process is particularly applicable to the 18-8 (Type 304) type of stainless steel, which has a wide use in the textile industry. However, it is applicable to other types, including Type 316, which likewise has many textile uses. On 18-8 stainless steel, for example, a surface hardness of 1200 Brinell is obtained, with a hardness penetration of 0.01 in. and maximum hardness at about 0.0015 in. below the surface. Surface hardening not only increases the resistance of the stainless steels to abrasion, pressure cutting, and wear, but results also in a surface which compares quite favorably with untreated stainless steels in resistance to corrosion. The surface-hardened layer is not resistant, how-

ever, to attack by halogen acids in the reducing condition.

Practically any type of surface can be hardened, but best results are obtained on a machined surface finished with a fine cut. The surface hardening operation dulls any burnished or polished surface. The hardened surface is a clean, whitish-gray finish, free from oxides or scale. The treatment produces a slight increase in the diameter or thickness of the parts. As a rule, parts should be machined to exact finished dimensions before they are sent to be hardened; after surface hardening, parts which require close dimensional tolerances should be ground, honed, or lapped, removing only the small amount added in the hardening operation. On some parts certain sections must remain soft; this can be done by applying a special paint to those sections before the part is hardened.

Dryer Attachment Increases Production

A new ceiling unit which increases capacity of any cloth tenter dryer has been announced by Sjostrom Machine Co., Lawrence, Mass. This new Counter-Flo unit requires no floor space as it is usually hung on the ceiling between the vacuum extractor and the dryer. A space about four feet square is occupied by this unit. Inside are a series of baffles and warm air is propelled throughout the unit in such a manner that an additional amount of moisture is removed from the cloth before it reaches the dryer. A dryer attachment has been in successful operation in a mill and it has been stated that dryer speeds have been increased more than 30% on 32-oz. government overcoating, and on other types of fabrics even greater increases have been made possible.

Useful Accessories For Textile Mills

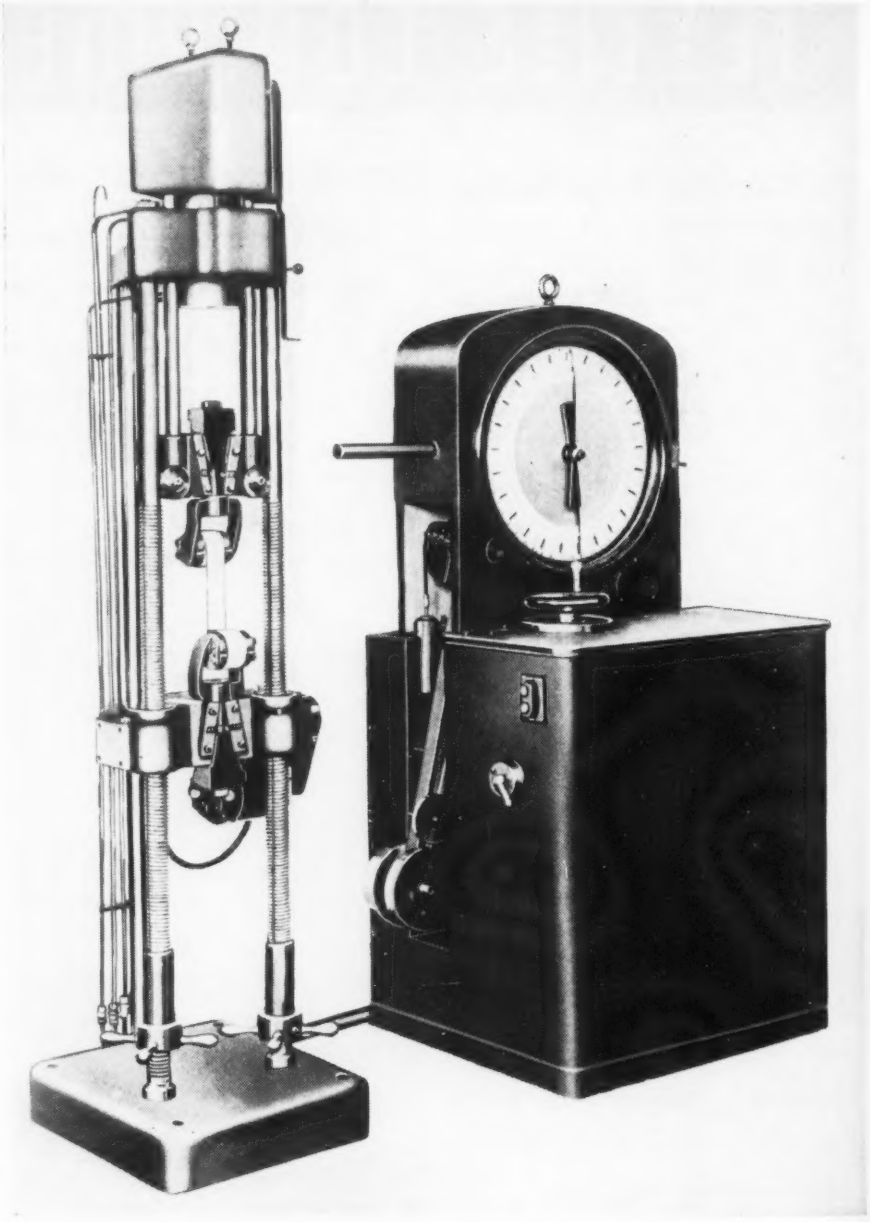
Engine generator sets to fill power requirements about textile mills have been developed by Climax Engineering Co., Clinton, Iowa. A new all-purpose 435 hp. high-speed gas engine which may be operated on natural gas, butane, gasoline or other fuels is available for operating generators at a low cost in the generation of electric power.

High altitude test cabinets, useful for those textile mills maintaining testing laboratories where development work is carried on for military fabrics and civilian fabrics, is being manufactured by American Coils Co., Newark, N. J. This test chamber measures 72½ in. wide, 101½ in. high and 49 in. deep. The interior has 11 cu.ft. of usable space. Temperature ranges from −70° C. to +70° C. and pressure from atmospheric to 60,000 ft. may be maintained.

A safety lamp lock for use with fluorescent fixtures has been designed by Miller Co., Meriden, Conn. This device minimizes the risk of lamps falling from sockets, thereby preventing dangerous accidents. The lamp lock is designed so that it will not interfere with fixture relamping and cleaning.

An oil window unit for installation in oil reservoirs to indicate visually the oil level, is being produced by Bijur Lubricating Corp., Long Island City, N. Y. The oil window unit may be pressed into a reamed hole in a machine casting, provided the casting wall thickness is ¼ in. or more. A plastic window provides sharp visibility of oil levels. Windows are available in sizes of ⅝ in., 1 in. and 1¼ in., respectively.

PARACHUTE WEB TESTING MACHINE



Hydraulic testing machine in which all breaking loads are measured by gravity stress acting on the pendulum, is being used to test webbing used in parachutes employed by the armed forces. This machine, developed by Riehle Testing Machine Division, American Machine and Metals, Inc., East Moline, Ill., has a maximum loading capacity of 10,000 lb. It can accurately register load tests as low as 50 lb. A special type web grip enables quick, easy attachment to ends of samples up to 3 in. wide. Testing speeds may be varied, 12 in. per min. being maximum.

Mill Maintenance Section

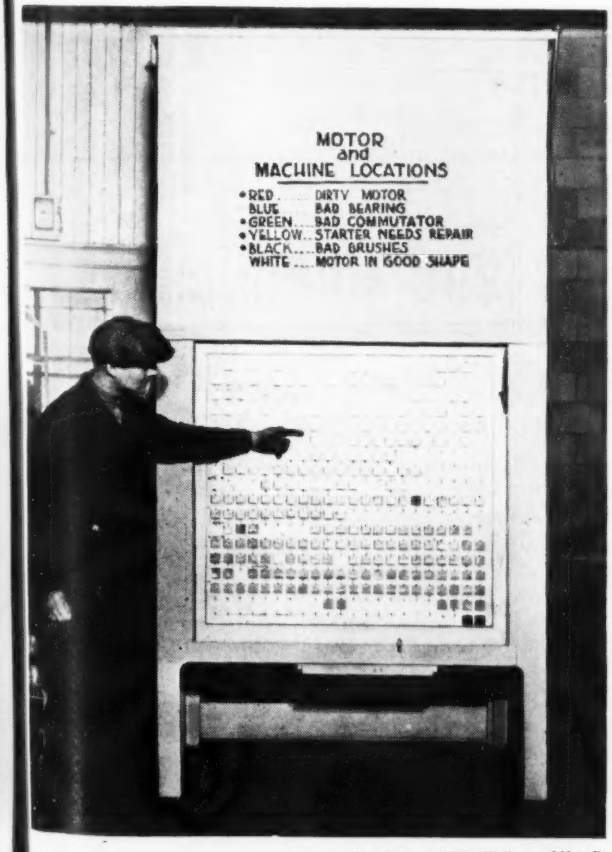
Motor Conditions Seen at a Glance

Know the conditions of the motors in your loom shed? If you are not certain as to which motors should be overhauled and repaired, then a simple "Motor Board" should be constructed similar to that used for checking the condition of every electric motor in a few minutes at the LaPorte, Ind., Works of Allis-Chalmers Mfg. Co., and as described in a recent issue of *Victory Production and Maintenance News*, published by this company. This motor board may be used for other departments, aside from the loom shed of a mill or for the entire mill and should be of great assistance to the master mechanic in "keeping 'em running."

In the process of stepping up routine maintenance to a wartime tempo, a need was found for centrally recording the results of periodic motor checkups. A cabinet was designed, as shown in Figs. 1 and 2, to hold a number of boards approximately four feet square. Divided into an upper and a lower half, the cabinet recesses the boards in the upper half while those below are observed, since they are arranged one in front of the other. Boards can be raised from the bottom half and locked in place in this upper "hood."

Key to the system of maintaining a constant check on the mill's motors are small metal tags, each of which is stamped with the number of a motor in the shop. Each board represents a room or division, and the position of the hook on which each tag hangs represents the position of that motor in the room. If the motor should be moved to another location, its tag is simply transferred from one hook to another, making the system very flexible.

As motors are inspected, or reports on their conditions are received, these specific conditions are indicated on the motor board with colored pins placed under the tags. The condition each color pin represents is plainly shown on the panel covering the upper half of the board in Fig. 2. If desired, it is possible to represent other conditions about a mill by modification of the coloring of pins. As quickly as repairs can be made or precautions taken, pins are removed or changed.



Courtesy of Allis-Chalmers Mfg. Co.

Fig. 1. Motor maintenance board suitable for textile mills showing metal tags containing motor numbers.

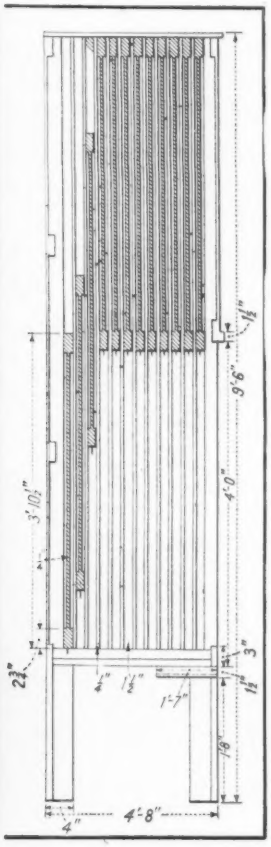


Fig. 2. Construction of motor board.

Protecting Air Conditioning Systems In Dyehouses

Use of heat diffusers and ventilating equipment in dyehouses to remove excessive vapors where dyeing is done creates a maintenance problem. Fumes from dye vats are acid and have a corrosive effect on the metals used in the air handling system. Carrier Corp. solved this problem by protecting the surfaces of air handling equipment with a plastic paint. As the paint is acid resistant, it is not attacked by the fumes, hence conserving equipment which can no longer be replaced.

Coning Operation Hints

New coning operators frequently find occasional hints helpful in enabling them to produce a cone of superior quality. Operation hints, as outlined in "How to Keep Your Roto-Coners Healthy and Happy," and offered by Universal Winding Co., should assist in keeping yarn quality at a high level under war-time conditions. Outlined are seven helpful suggestions.

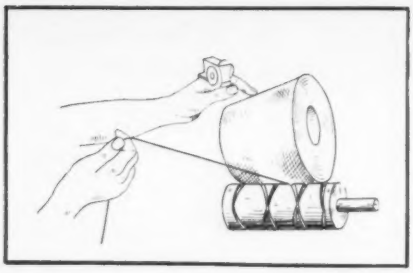
1. When threading the tension, a flick of the finger will remove any lint or yarn slubs in slub catchers and tension bracket.

2. When starting spindle, hold yarn in right hand to prevent kinks from going into package; revolve cone with fingers of left hand, and also with same motion, touch starting handle. When yarn is under tension, drop it into the groove. This action will prevent damaging the yarn by sudden contact with fast-moving roll.

3. Develop the habit of pressing down the starting handle with the elbow or forearm; this leaves both hands free.

4. Allow cone to come to full stop before touching it.

5. Never allow cone holder to remain without a cone placed upon it as this is insurance against cone holder



Approved method of starting cone after a break so as not to damage yarn.

dropping on roll due to faulty adjustment of spindle stopscrew.

6. Always examine a new bobbin for imperfections.

7. If a finished cone shows stitches or other imperfections, do not start that spindle again until the fixer corrects the trouble.

New Life from Old Chain Pins

With replacements scarce and mills keeping all equipment in constant production, emergency measures in servicing chain drives may be required, according to a folder published by Link-Belt Co.

Correctly applied drives are selected with such an ample safety factor that even considerable wear on the pins, as shown in Fig. 1, does not weaken the chain beyond use. In designs where pins are locked against rotation, wear is confined to that side against which the next link is held under tension. Rotating these pins 180°, places articulation action upon a practically unused pin area and, as far as the pins are concerned, restores original pitch.

Certain classes are particularly adapted to this type of reconditioning since pins are made to lock in either position. On some chains the pin heads must be renotched. Substitute replacement pins which do not lock against rotation should not be used as they will soon wear through the eyes of the links.

Bushed chains afford another opportunity for pitch correction by reversing the bushings or rotating them 180°. This, however, involves the dismantling and reassembly of heavy press fits and should be avoided except as a last resort.

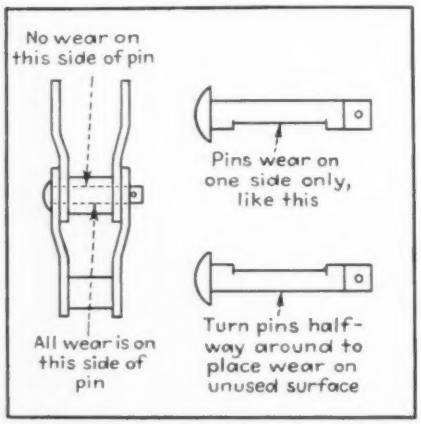

No wear on this side of pin
Pins wear on one side only, like this
All wear is on this side of pin
Turn pins halfway around to place wear on unused surface

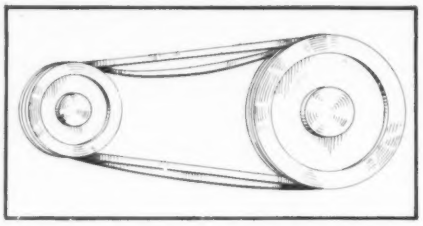
Fig. 1. Wear occurs on one side of pin. Rotating 180° restores pitch.

Placing New V-Belts In Service

With war-time production and the scarcity of replacement parts, especially those made of rubber, maintenance men frequently replace a broken belt in a V-belt drive group with a new belt. Don't use new V-belts with old V-belts is a warning issued by Multiple V-Belt Drive Association, in a folder.

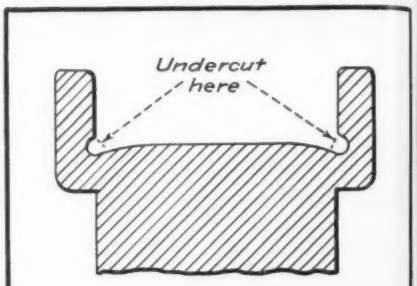
Old belts dry out to some extent and the surface rubber air-cures to a degree where the coefficient of friction may be entirely different from new belts. Variations in cross section, stretch characteristics and elastic properties may seriously affect the over-all life of a mixed set of belts. Moreover, it is difficult to match new belts with old belts as to length.

Save discarded V-belts for emergency use. Often discarded or worn belts, if not ruptured or torn, can be used in emergencies or for temporary replacement. A matched set can frequently be made up of old belts which have been used on the same drive.



Difference in belt lengths between old and new places greater strain on some, causing rapid wear.

PREVENTS BELTS FROM CLIMBING



Are your leather belts climbing on the flanged or step-cone pulleys? Then one simple method of correcting this condition is by machining or undercutting the fillet, as suggested in *Leather Belting Conservation*, issued by Baldwin Belting & Leather Co.

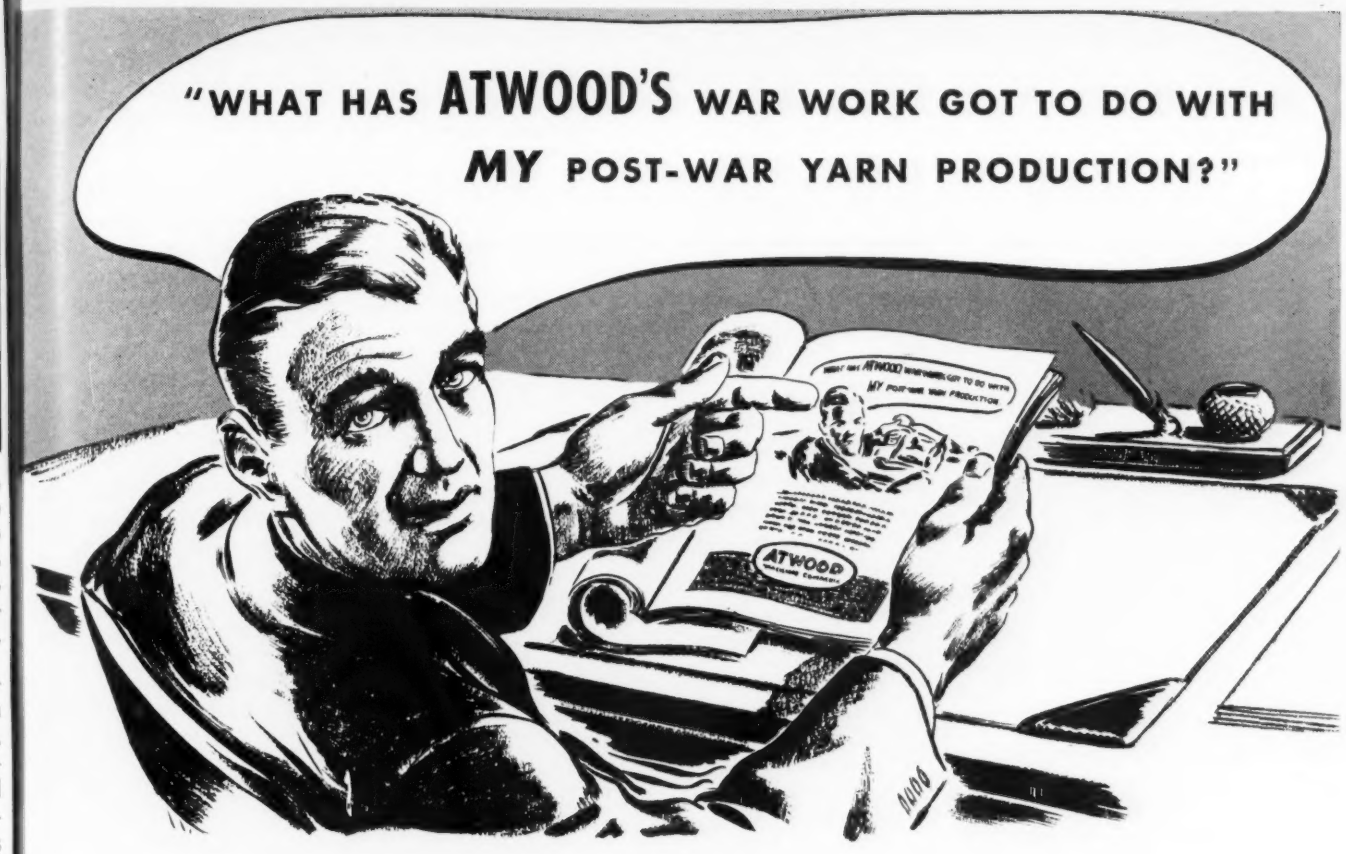
New Dyes and Chemicals

Dyes for Printing Acetate Rayon

A range of basic dyes for printing acetate rayon has been announced recently by Bernard Color & Chemical Corp., 333 Hudson St., New York. This range, known as Bernazine colors, is characterized by brilliancy of shade and high color value. The Bernazines, when correctly printed, are faster to light on acetate rayon than on other fibers. Also, they give different shades on acetate rayon from those produced on other fibers. The Bernazines can be printed without use of mordants or fixing agents, can be used as resist colors in discharge printing, and can be mixed with acid or acetate colors. They are fluorescent in ultra-violet light.

Water Repellent

Development of a new water repellent for application to cotton, rayon, wool, and other textiles has been announced recently by Franklin Research Co., 5134 Lancaster Ave., Philadelphia. This compound, known as Colacet, is a highly concentrated wax emulsion conforming to Quartermaster Corps Tentative Specification P.Q.D. No. 115b. Colacet can be applied on a padder, quetsch, or similar equipment, 3% of the compound based on the weight of the fabric being sufficient in most instances to impart a high degree of water repellency. Curing at high temperatures is not necessary, but thorough drying is essential. If desired, Colacet can be applied in conjunction with starch.



Cotton • Worsted • Rayon • Spun Rayon • Nylon • "X"

— whatever type or combination it may be, here's Atwood's answer, straight from the shoulder.

The Atwood production organization is concentrating on war equipment built to standards of precision — and some of it calling for operating speeds — beyond anything we ever tackled in all our years of specialization in fine textile yarn machinery. One result of this experience, as sure as day follows night, is going to be *better Atwood textile machinery.*

Our engineers have not been idle during this period, either. Already we can tell you of machinery developments that will go a long way toward meeting the new problems and production demands you will shortly be facing.

Let's get together in order that you may be fully informed. Just say the word.

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New Publications

The Fighting South

THE FIGHTING SOUTH, by John Temple Graves; G. P. Putnam's Sons, New York; $2.75

Several fine, thoughtful books have been written about the South within the last few years. Mr. Graves brings in a new viewpoint, and a new analysis of that section in his contribution to southern study. Long recognized as being liberal in both his thinking and his writing, he brings to the fore certain angles of the southern set-up which others have failed to touch upon.

"The Fighting South" was not written to label the southern people as a fighting people, but to explore their background in search of explanation. The exploratory diagnosis is well done, covering economics, industrialization, politics, opportunities, and racial questions.

He points out the fallacies of the Solid South and the aristocratic tradition. He unveils many of the South's pet theories, but he writes and speaks in a truthful and constructive manner.

Whether you live in the South or not, you should read this book. It's informative and it's authoritative. But aside from that, one gets a genuine pleasure from the able-handling of words and expressions in which lies John Temple Graves's chief talent.

Handbooks for Foremen

QUALITIES OF A GOOD BOSS, HOW TO HANDLE GRIEVANCES, HOW TO CREATE JOB SATISFACTION, HOW TO GET OUT MORE WORK, HOW TO TRAIN WORKERS QUICKLY, HOW TO CUT WASTE; by Glenn Gardiner, Elliot Service Co., New York, N. Y.

Glenn Gardiner, the author of this series of booklets, is assistant to the president of Forstmann Woolen Co., Passaic, N. J., where he is confronted daily with all the problems of industry which he is writing about. Mr. Gardiner has had experience as a workman and a foreman and has written a great deal on business and industrial subjects during the last 20 years. He has been successively foreman, labor manager and director of foreman's training at various times with Samson Tractor, Chevrolet, Fisher Body, and Pontiac Divisions of General Motors, and has served as vice-president in charge of the production division of American Management Association.

The hand books prepared by Mr. Gardiner are as follows: QUALITIES OF A GOOD BOSS: A good check list that can be used by foremen to determine their qualities of leadership. It can also be used to rate the man as seen through the eyes of subordinates and superiors.

HOW TO GET OUT MORE WORK: Make the most of your man-power, plan-power, and machine-power. This is a useful booklet for those who wish to check on the production management of a job.

HOW TO CUT WASTE: With the shortage of so many materials it is important for every foreman to know how to eliminate all types of waste including waste of manpower. This little booklet tells how to spot waste, and how to attack it.

HOW TO CREATE JOB SATISFACTION: Such things as giving an employee a good start, and making the job more desirable are concisely covered in this book. Other things such as starting a woman on her first industrial job, and building a group that pulls together are well worth the attention of any foreman.

HOW TO HANDLE GRIEVANCES: Grievances, both imagined and real, are listed with actions to take, and space is given for notes so that the user of the book can develop case studies of his own.

HOW TO TRAIN WORKERS QUICKLY: The methods described in this manual are sound fundamentals of tested job-instructing principles, and are the same methods which the author incorporated in the job instructor training program which the Government adopted for application to the war industries. These are presented in simple terms for those who must pass their "know how" along to others.

Stoker Operating Guide

HOW TO GET TOP PERFORMANCE FROM YOUR STOKER: compiled by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.; price, $2.00.

This is a pocket-size, plastic-ring-bound, hand-book of 42 pages containing instructions, suggestions, and data on ways of getting the highest efficiency from the Westinghouse stoker. The contents are broken down into three general sections: operating and maintenance suggestions, inspection charts, and inspection summary.

Under the first section there are sub-heads covering such details as instruments, air requirements and regulation, operation, fuel distribution, construction, regulation, hydrofeed drive, and link-grate stokers.

Inspection charts call attention to various features requiring periodic inspection. Suggested records and other data that will be of help are included in the final section.

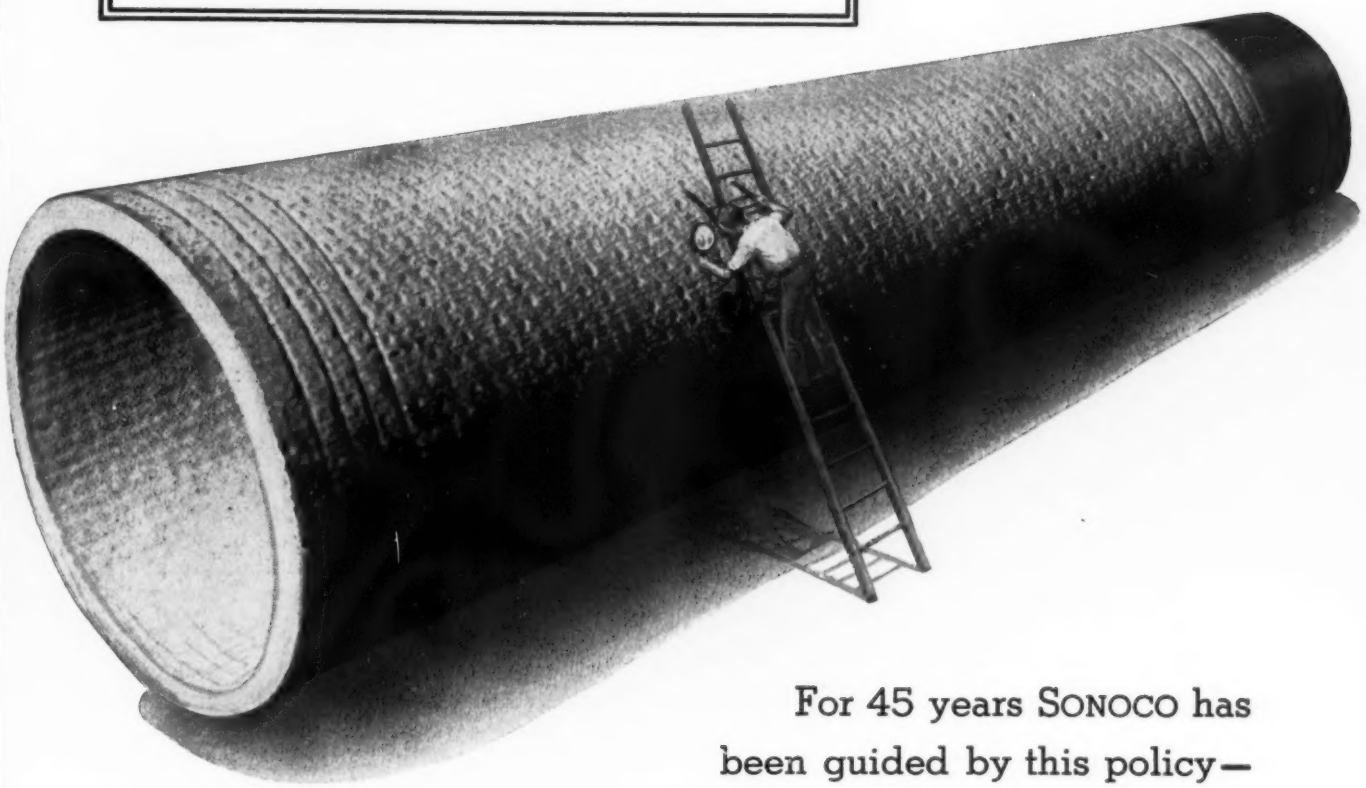
News of Suppliers

Proctor & Schwartz, Inc., Philadelphia, have arranged with National Automotive Fibres, Inc., Oakland, Calif., whereby they will serve as Proctor's West Coast reclothing shop. Doing all reclothing work on garnett cylinders for West Coast plants, National Automotive Fibres, Inc., will use Proctor wire exclusively and all work will be done at the standard Proctor prices which prevail at the Proctor reclothing shop in Chicago, Ill.

Devoe & Raynolds Co., New York, through W. H. Mathews, vice-president and chairman of its post-war planning board, has formed a consumer paint buying committee to study post-war trends in trade sales. The new committee is headed by Kenneth Wood, National Accounts Division painter and maintenance sales manager. He will be assisted by Renshaw Smith, Jr., trade sales manager.

Owens-Corning Fiberglas Corp., Toledo, Ohio, is about to open its new plant at Huntington, Pa., which will produce glass fiber textiles used in plane construction and for the insulation of air-borne electrical equipment. Production will be nearly 100% for war purposes. Manager of the

No Problem too Large
No Detail too Small



For 45 years SONOCO has been guided by this policy—

In following this course we have:

(1) developed the "know how" of making superior quality textile paper carriers... (2) gained such widespread recognition that we are the largest producer of these items in the world... and (3) through experience gained in expanding our production for war products, have achieved an efficiency enabling us to continue our dependable supply of peace-time products.

BUY MORE WAR BONDS

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SERVES THE WORLD
PAPER CARRIERS

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

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DEPENDABLE SOURCE OF SUPPLY

SIDNEY C. MOODY, now assistant general manager of all departments of Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J.

new plant will be Marshall Burch, now superintendent of the company's Newark, Ohio, glass textile factory. John Saalfield, now of the company's Toledo general office staff, will be production superintendent. Walter Aikman, also of the Toledo general office staff, will be plant engineer. Personnel director will be Alva B. Walton, now employment manager at the company's Newark, Ohio, factories.

Diamond Alkali, Pittsburgh, Pa., has appointed Arch H. Copeland and John Berdan as assistant directors of sales. J. D. Mattern has been named manager of alkali sales covering the sale of soda ash, caustic soda and bicarbonate of soda.

Draper Corp., Hopedale, Mass., has temporarily transferred Walter M. Mitchell, its southern representative from the Atlanta office to company headquarters at Hopedale. The change is for the absence of Erwin N. Darrin, vice-president, who will take an 80-day business trip by plane to Mexico, Central and South America following his convalescence from recent indisposition. During Mr. Mitchell's stay in Hopedale, C. H. Turner will continue in charge of the Atlanta office.

WALTER M. MITCHELL, southern representative of Draper Corp. who has been transferred temporarily to the home office at Hopedale.

Whitin Machine Works, Whitinsville, Mass., has elected Robert McConnell as a vice-president of the company. Previous to his association with Whitin, Mr. McConnell had been superintendent of the Pequot Mills of Naumkeag Steam Cotton Co., Salem, Mass., for many years. With Whitin he has been in charge of outside service men and has travelled widely in textile centers of United States and Canada. He is also in charge of development work on cotton and cotton-rayon blends, and of the experimental department.

Louden Machinery Co., Fairfield, Iowa, has recently opened a branch office in Atlanta, Ga., to handle sales and engineering of its overhead material-handling system in the South. In charge will be Curran S. Easley, who resigned from the engineering staff of Robert & Co. to take over this work. Mr. Easley was chief resident engineer for Robert & Co. on the Bell Aircraft Assembly Plant, now nearing completion. He was in charge of other important war projects in Texas. Previously he was connected with J. E. Sirrine & Co. and has had several other industrial assignments. For many years he was closely identified with design and installation of material handling systems.

CURRAN S. EASLEY who represents the Louden Machinery Co. in the South with offices at Atlanta.

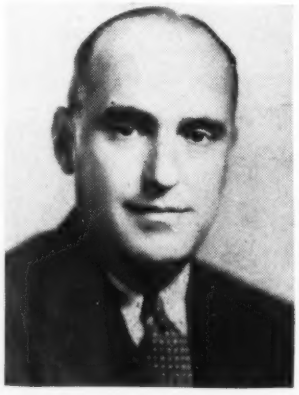
Fidelity Machine Co., Philadelphia, has been awarded the white star signifying renewal of the Army-Navy "E" Pennant for another six months.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has reorganized the central office manufacturing and engineering staffs due to expansion of the company's activities. Walker Penfield, formerly manager of engineering, has been appointed works manager. William F. Mitchell, formerly assistant to Mr. Penfield, continues in that capacity with the title of assistant to the works manager. Floyd H. Walker, formerly chief engineer of Swenson Division of the Whiting Corp., is appointed chief engineer and will be in charge of the Central Engineering Division. A. E. Gaydos, formerly in charge of the Central Engineering Division under Mr. Penfield, has been named assistant to the vice-president in charge of manufacturing. Vincent K. O'Connor, formerly with the Tacoma, Wash., office, has been appointed manager of the newly-created personnel department. Russell E. Cushing continues at Wyandotte as director of chemical engineering department, reporting to Mr. Penfield.

W. H. STEINKAMP, who has been appointed assistant general sales manager of the Brown Instrument Co., Philadelphia, a division of Minneapolis-Honeywell Regulator Co. During the last 13 years Mr. Steinkamp represented the Brown company in New York, Buffalo, Cleveland and Pittsburgh, where he served as branch manager.

Robert Winternitz Advertising has moved to new offices at 461 Fourth Ave., New York.

American K. A. T. Corp., New York, has appointed Eimer & Amend, New York, and Fisher Scientific Co., Pittsburgh and Montreal, to take over



B. M. HORTER, who has been appointed as purchasing head of Cutler-Hammer, Inc., Milwaukee, Wis. He succeeds F. S. Wilhoit, who has retired after 41 years of service with the company.

KEEPING *alive* YOUR BELTING HORSEPOWER

• BARNES BELT DRESSING AND PRESERVATIVE

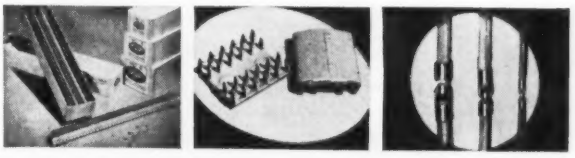
● A dried-out belt wastes horsepower—a dried-out belt cracks, slips . . . it is *"dead"* . . . it's not doing its job of transmitting horsepower; and down goes your production. Good dressings and preservatives put back into the belt the *life that was once there*, preserve it against cracking, stiffness, slippage. Barnes Dressings and Barnes Belt Cement and Belt Fasteners are *the very life of belting*. The products of Belting specialists, they preserve, they lubricate, they soften, they strengthen. Keep your Belts ALIVE with Barnes Products and keep up your War production.

LIQUID DRESSING.

Keep the leather in leather belts in the same condition as it was when tanned. Working conditions take from the belt qualities necessary for maximum production and efficiency. Our belt dressing and preservative puts these qualities back into the belt and maintains the original standard of leather. Liquid preservatives and dressings should be applied when belt is to be shut down for at least a few hours. Do not apply when belt is running.

• BARNES WATER PROOF CEMENT *and* THINNER

For all leather cementing—lagging pulleys or splicing belts—use a waterproof cement. Easy to handle. Fast sticking. Thoroughly tested. Ready for use from can. Available in air tight one quart to five gallon cans. For pliable and secure laps and plies, waterproof cement is superior to common glues.



• BELT FASTENERS

Clipper belt hooks and Talcott belt plates for use on all sizes of flat belts. Quick method of making belts endless. Correct size hooks and plates should be used for the particular width of belt otherwise damage may be done to pulley. Moran round belt couplings for all round belt sizes.

• WIZARD BELT DRESSING STICKS

Instant remedy for belt slippage. Should be applied sparingly while belt is running. Do not allow to cake on pulleys or on belt.

• BLU-SKIN LACING *(Chrome)*

Lacing is adaptable for all conditions. Is not affected by humidity. It makes a more perfect endless belt—saves wear and tear on pulleys—reduces slippage, giving maximum production.

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE *Textile Leather* HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

the regional distribution of K. A. T. all-colloidal water treatment for use in laboratory water stills.

E. I. du Pont de Nemours & Co., Wilmington, Del.—Dr. Robert E. Rose has retired after 22 years' service as director of the technical laboratory at Du Pont Dye Works, Deepwater, N. J., to assume new duties as consultant to the laboratory. He is succeeded as director by George H. Schuler, of Pedricktown, N. J., connected with the laboratory staff throughout Dr. Rose's tenure as director. Mr. Schuler has held the post of associate director since 1938. Dr. Miles A. Dahlen is continuing as assistant director. He was appointed in 1939, following eleven years as chemical division head at the dye works' Jackson Laboratory. Dr. William Stansfield Calcott has been appointed assistant chemical director in charge of development of the Organic Chemicals Department, with offices in Wilmington, Del. Dr. Calcott, since 1931, has been director of the Jackson Laboratory and the semi-works plant operated at the Du Pont Dye Works, Deepwater, N. J. John Marlin Tinker, assistant director since 1938, has been appointed director of the laboratory and semi-works. Dr. George Edward Holbrook was advanced from head of the New Products Division to assistant director.

Atlantic Rayon Corp. has removed the New York office of the yarn division to the 42nd floor of the Empire State Bldg., where are located the other branches of the company.

H. H. Willis, textile consultant, Clemson, S. C., has appointed J. V. Verner, lately in charge of the standards department of Riverside & Dan River Cotton Mills, Danville, Va., as field representative. W. H. Monckton, Jr., also from Danville, has joined Mr. Willis' staff, as has also Earl W. Starnes of the cost department of Riverside & Dan River Cotton Mills.

Chemical Developments Corp., Dayton, Ohio, has announced the following recent additions to its technical staff: Melvin A. Crosby, chief engineer; Gordon M. Williams, John R. Fisher, Jr., and Elizabeth D. Strickland, research chemists; and Dr. Lena Ranis Ziegler, patent chemist.

Hercules Powder Co., Wilmington, Del., has appointed Paul Mayfield as assistant general manager of the Naval Stores Department, of which he was previously director of sales. Hercules has established a sales research division to investigate new markets for Hercules chemical products and to study

FRED E. HARRELL, assistant chief engineer of Reliance Electric & Engineering Co. since 1934, who has been appointed chief engineer, reporting to A. M. MacCutcheon, engineering vice-president.

the needs of industries served by the company. Dr. John H. Long will be in charge of the new division.

General Electric Co. has moved the sales and order service headquarters of the Resin and Insulation Materials Division of its Appliance & Merchandise Department from Bridgeport, Conn., to Schenectady, N. Y.

B. F. Goodrich Co. plants in Niagara Falls, N. Y. and Louisville, Ky., have received notification of star awards for their Army-Navy "E" citations which continue use of the "E" pennant and pins for another six months.

Hart Products Corp., New York, has added William A. Green to its technical staff to work with textile manufacturers and processors in connection with their problems in the field of permanent finishes and pigment colors, and development of new fabrics. Mr. Green was in charge of research and development for the Sayles Finishing Plants for many years, also serving as a superintendent in Glenlyon Print Works Division.

Pump Engineering Service Corp., Cleveland, Ohio, has changed its name to Pesco Products Co. This change has no effect on present personnel or on the company's affiliation with Borg-Warner, the parent company.

International Nickel Co., New York, has appointed T. H. Wickenden as manager of Development and Research Division, and H. J. French as assistant manager. Mr. Wickenden, who has been assistant manager of the division, succeeds the late Albion James Wadhams.

Lukens Steel Co., Coatesville, Pa.—C. L. Huston, Jr., assistant to the president and member of the board of Lukens, has been named president of Lukenweld, Inc., a subsidiary. He succeeds Everett Chapman who resigned to establish his own business as a consulting engineer.

Wickwire Spencer Steel Co., New York, N. Y.—E. Perry Holder, president of Vulcan Iron Works, Wilkes-Barre, Pa., has been elected president of Wickwire Spencer Steel Co., succeeding E. C. Bowers, who has been president since 1926, and has resigned because of illness. Mr. Holder is resigning from Vulcan Iron Works.

Whiting Corp., Harvey, Ill., has acquired a controlling interest in the LeVal Filter Co. of Chicago. LeVal operations will be continued at the present address, and H. L. Pratt, vice-president of LeVal will remain in charge.

Page N. Hamilton, former sales representative of Harshaw Chemical Co. in the New York area, has resigned his position with that company to open an office at 205 East 42nd Street, New York, to deal in a general chemical business. W. B. Lawson, Inc., of Cleveland, sole distributor for Ferro Drier & Chemical Co., has appointed Mr. Hamilton as sales agent for Northern New Jersey, Metropolitan New York, and New England for Ferro products and other chemicals.

G. E. Holds Industrial Electronics Conference

General Electric Co. held a press conference on industrial electronics at its Schenectady, N. Y., plant on Sept. 14. Following the presentation of papers by G. E. engineers on various phases of the subject and an inspection of an industrial electronics exhibit, was a plant tour during which those attending the conference had the opportunity of seeing many types of electronic equipment actually in use. Following are subjects discussed and speakers at the conference: "Industrial Electronics," L. A. Umansky, assistant manager, industrial engineering division; "Electron Tubes," W. C. White, engineer, electronics laboratory; "Electronics in Power Conversion and Frequency Changing," L. W. Morton, industrial engineering division; "Electronic Measurements," W. C. Hutchins, manager, special products division; "Electronic Heating," J. P. Jordan, industrial heating engineering division; and "Electronic Control," E. H. Alexander, engineer, industrial control division. W. C. Yates, assistant manager, industrial divisions, was chairman.

Even on the Navy Washline

Guadalcanal, Kiska or Iceland. Wherever the Navy sails, the Army moves or Marines land, Kaumagraph is with them. Kaumagraph Dry Transfers for every marking use you can imagine and some you've never dreamed of. Hidden Prestomarks in Navy skivvy shirts, to strengthen holes that do away with clothespins on washdays. Prestomarks that firmly attach ankle patches to flight deck sneakers. Kaumagraph products playing their part in the equipment that is helping clip the Axis.

True, Kaumagraph is filling civilian orders, but government and war orders must have the green production light. And we say thanks to all our customer-friends who are patriotically cooperating in helping us put first things first.

Our never ceasing research, which has always made Kaumagraph first in all basic marking improvements, is still pioneering for today's war needs, for tomorrow's textile renaissance.

If you are stymied on a war problem, or are planning for post-war, our research facilities are at your disposal now. Why not call a Kaumagraph Identification Man today?

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Dry Transfers
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LOOMFIXERS' MANUAL

WOOL SECTION—Chapter XVI (Cont.)—Protector Motion

By EUGENE P. SCHREMP

THE TYPE OF PROTECTOR MOTION used on W-2 and W-3 C&K woolen and worsted looms, illustrated in Fig. W36, is constructed in one piece. In some instances it may be necessary to twist the protector rod slightly so as to have both daggers perfectly parallel so that when the motion operates the points of the daggers will rest in the V-shaped grooves of the knock-off levers. Check this adjustment by removing the shuttle and turning the loom until the tips of the daggers rest against the under side of the knock-off levers for a distance of about ¼-in. If a dagger is out of line, only one side will be resting against the under side of the knock-off lever. Remedy this condition by twisting the protector rod. This operation can be accomplished by loosening the protector finger and slipping a piece of pipe over each protector dagger. By holding down the side that is low and pressing opposite pipe the protector rod can be twisted so as to have both daggers resting firmly against the lower side of the knock-off levers. This adjustment is very important, otherwise only one dagger will be used when the loom bangs-off. Under such conditions it would be impossible to set the protector fingers properly unless the daggers are parallel.

Sleeve couplings are sometimes used on the protector rod. When these couplings are used there is no necessity of twisting the protector rod. Turn the loom, with the shuttle out of the box, until the tips of the daggers rest against the underside of the knock-off levers. Loosen the setscrews in the sleeve coupling. The protector rod spring will hold one side of the rod against the knock-off lever. Have the opposite side rest firmly against the under side of the knock-off lever and tighten the setscrews in the sleeve coupling. Check this adjustment to make certain that both dagger points rest in the V-shaped groove of the knock-off levers.

Protector rods should be replaced when the dagger becomes worn or blunt. When sleeve couplings are used it is only necessary to replace the end that is worn. One-piece protector rods may be cut and a new end installed when necessary. If this operation is done all rods should be cut the same length or trouble will be experienced when replacing a repaired rod end.

Protector rod fingers are adjusted by removing the shuttle from the box and turning the loom so that both daggers rest in the V-shaped grooves of the knock-off levers. Adjust the fingers so that they both rest firmly against the binders. After the setscrews have been tightened, check this adjustment as sometimes the setscrews wear a hole in the protector rod and may slide back into only one position. When this occurs, the finger should be removed and the rod filed so that the setscrew will hold the finger in the desired position.

Stopscrews in the protector rod stand should be adjusted so that there is ¼-in. clearance between the rod finger and the face of the binder when the shuttle is fully boxed. This adjustment should be checked with the shuttle boxed on both sides of the loom. Excessive clearance at this point will allow the dagger points to strike the shipper rod when the loom is running. This setting not only wears the dagger points but may also cause the loom to knock-off. On older type looms the shipper rod may be bent out of shape if the stopscrew is not properly adjusted, causing the protector motion to be inoperative.

Knock-off levers should be replaced when the V-shaped groove becomes worn, otherwise the protector dagger may slip out of the groove when the loom bangs-off and cause the loom to turn over. Levers may be repaired by filling in the worn parts with aid of a welding torch. After the groove has been cut, the knock-off lever should be sent to a blacksmith to be hardened slightly at the point where normal wear occurs. Unless dagger points are hardened, they will soon weaken and cause difficulty with settings.

To remove the knock-off lever, the setscrew in the breast beam must be loosened. This setscrew holds the lever in place, but should never be tightened so as to bind the movement of the lever, otherwise the setscrew may break when the motion operates.

Crompton & Knowles Loom Works

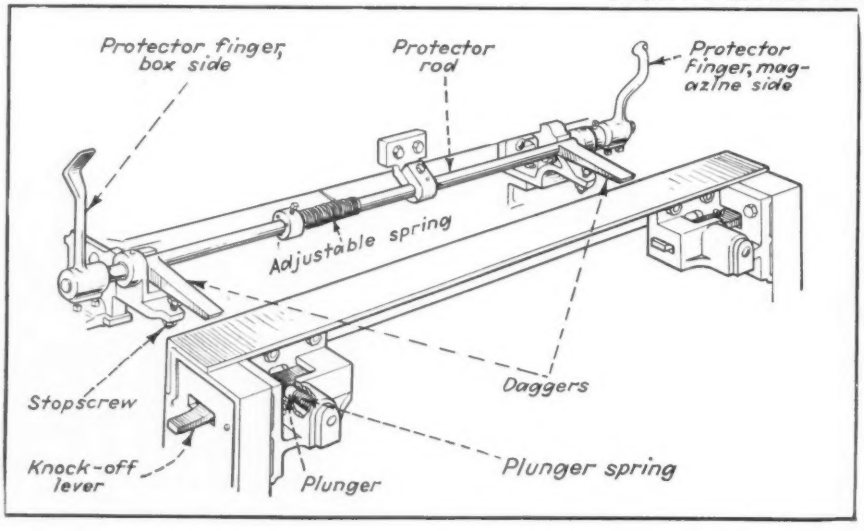


Fig. W36. Protector motion used on C&K W-2 and W-3 looms.

KING COTTON REALLY HAS GONE TO WAR!

Staggering facts these—

- 11,000 separate items* of cotton are being used by our Armed Forces.
- 13,000,000 Americans** are identified with cotton growing and manufacturing in an all-out effort to supply the Nation's fighting units.
- 120 yards of cotton cloth** are required to equip the world's best-dressed soldier. Other cotton items range from parachutes, to guncovers, to bathtubs.

*Exhibited by National Cotton Council at Memphis Conference.
**Source—The Cotton Textile Institute, Inc.

★

Dixie Durene (A PRODUCT OF CONTROLLED MANUFACTURE) is used in many articles of military clothing and equipment where two-ply mercerized yarn is essential. Army and Navy uses take most of our output. Only a small part is available for civilian needs — until after VICTORY is achieved.

10% OF DIXIE'S PAYROLL IS INVESTED IN WAR BONDS

Dixie MERCERIZING COMPANY

CHATTANOOGA 1, TENNESSEE

AMERICAN COTTON MADE IN U.S.A.

FIXING HOSIERY MACHINES

CIRCULAR MACHINES—Chapter XVIII (Cont.)—Split Foot Machine

By JULIAN W. HUGHES

Dividing Cam

THE FUNCTION OF THE DIVIDING CAM is to raise the jacks and their respective needles to a latch-clearing level so they will absorb the elastic yarn and knit a loop on every other needle along with an alternate loop of non-elastic yarn fed from the regular feed side.

The dividing cam is brought into active position when the machine starts to knit a new sock and remains in contact with both the long and short butts of the jacks until the Lastic-Top is finished. At first the control cam, through the thrust bar link and lever connection, moves the dividing cam far enough inwards toward the cylinder to engage the long butt jacks which are under the long butt needles on one side of the cylinder. When the last long butt jack has been elevated by this cam, it is moved all the way inward and elevates the short butt jacks. This operation continues until the elastic top is completed. It is very important that this cam be in place to elevate the first long jack. If it moves inwards too early, the cam will be withdrawn early and is likely to produce a drop stitch where the garter top joins the leg. If it moves toward the cylinder too late; that is, after the first long butt jack has passed the forward point of the cam, either a butt or the cam will be broken. The dividing cam must be timed so that it is in place the instant the first long butt jack reaches the forward point of the cam. After the first butt has been acted on, the control drum may be set to move the dividing cam all the way in any time before the first short butt jack reaches the forward point of the cam.

Eyelet Closing Cam

On all split-foot machines the needles and cylinder move in half revolutions—counter clockwise and clockwise—and take yarns from both feeds during the knitting of the split-foot. If some means for knitting lap stitches were not provided at the point where the loops from both feeds join, there would be open or eyelet stitches all along the suture seam. This would not only mar the appearance of the split-foot, but the fabric would be weak at the junction of the two yarns. To simulate the foot of English full-fashioned hosiery and reinforce the fabric at the suture seam, three specially designed jacks and an eyelet closing cam are provided to elevate three needles to take yarn for lap stitches on the backward movement of the needles.

The eyelet closing cam is composed of two parts, 3 and 4, Fig. C51 appearing in the July issue. Part 3 is the largest of the two and acts as a support for part 4 of the cam which does not extend to the bedplate of the machine as does the larger piece on the outside. There is a space under the inside cam for the regular jack butts to pass unaffected. Three jacks, however, with long butts at a higher level than the regular jacks are operated by these cams and raise the needles on the auxiliary feed side to knit the lap stitches in the suture seam. If eyelet stitches appear regularly along this seam the upper butt on one or more of these double-butt jacks is likely broken. If the eyelet holes appear irregularly along the seam the cam is not functioning properly.

Like the front jack cam, the binding screws on the end of the lever 5 holding the eyelet cams in place should always be kept tight because the cams might loosen and break or bend the butts. The shoulder screw slot 6 should be kept free of excess oil because fly will cling to its surface and a small accumulation might be sufficient to restrict the full swing of the cam lever 5. The shoulder screw 7 must not work loose because the lever may tilt the eyelet cams upward, throwing them out of accurate adjustment. If the cams do not swing inward far enough to act on the double butt jacks every time, wear or slippage in the links and bars may be the cause. Binding screws in the extension pieces may be loosed and the levers 8 and 9 adjusted to provide proper movement to the cams.

Auxiliary Cam Set and Sinkers

The auxiliary cam set and yarn feed is located on the left-hand side of the cylinder. Since circular hosiery is fashioned to fit the legs by gradually shortening the stitch to make the leg smaller as the knitting cycle progresses, mechanism is provided to automatically raise or lower the stitch cam set, as occasion demands. On the split-foot machine this is accomplished by an auxiliary control drum located at the back of the machine. This drum is to the rear of the machine and has four rows of segment cams extending around the face. Each row of cams has a corresponding cam follower or slide carried by a bracket that is cast integral with the vertical arm of the bell-crank lever. The upper or horizontal arm of this lever connects a vertical slide on which rests the auxiliary cam set. Consequently, the auxiliary cams are raised or lowered and the stitch shortened or lengthened by the drum cams moving the vertical arm of the bell-crank lever.

The cam-following slides carried by the bracket on the lower end of the vertical arm of the bell-crank lever are held in place by stopscrews—one for each slide. These screws are for adjusting the stitch length of the auxiliary feed yarn to suit the different parts of the hose. If the texture of the stitch from the top of the sock to the ring toe on the auxiliary side is too open or sleazy, the first screw on the left-hand side of the bracket should be turned slightly clockwise. This will force the vertical lever away from the fashioning cams and raise the stitch cams through the vertical slide connection; thus causing the stitch cams to draw a shorter stitch and make the texture closer. If the yarn is knitting too tight, turn this screw to the left until the stitch is of the correct texture for gage and counts of yarn being run. When the stitch texture of the leg of the hose is out of proportion to the other parts of the fabric, turn the second screw to the left to make the stitch tighter or looser.

FULLERGRIPT Brushes keep flat card clothing clean

This is how a set of Fullergript Card Brush Refills looks ready to operate

When brush materials are gripped in Steel—like Fullergript—you have no worries about atmospheric temperatures affecting the brush materials or holding method—no tufts to fall out from splitting blocks or cement loosening.

That's why hundreds of flat cards in mills today use Fullergript, and are constantly replacing old tufted construction as fast as possible. These pre-formed spiral all-metal-back strips are easily attached to your present wood cores by following our simple directions.

Study the photograph above. There are longer bristles at each end of brush strip to clean the ends of the flats where there is no card clothing and keep them free of oil and lint. Our Brush construction packs material into a continuous, dense strip with no gaps to permit insufficient cleaning of the flat clothing.

Cleaner Top Flats Mean Better Carding

Many Carders started with trial sets of Brush Refills, and results meant building up to full installations over a period of excellent performance. These mills are not located in any one section of the country but spread over many States.

We are confident that if you will give them a trial on a few machines, you will want only Fullergript Brushes.

Here's the Installation Record of Seven Mills in Seven States. Names on Request.

STATE	TRIAL ORDER	MACHINES NOW EQUIPPED WITH FULLERGRIPT
Maine	6 sets	202 machines
Georgia	6 sets	114 machines
Massachusetts	2 sets	102 machines
South Carolina	2 sets	104 machines
Alabama	12 sets	139 machines
Rhode Island	6 sets	242 machines
Tennessee	2 sets	126 machines

Over 5000 Cotton Cards are in use today with Fullergript Replaceable Brush Strips. Why not investigate the economy and greater efficiency of these remarkable brushes?

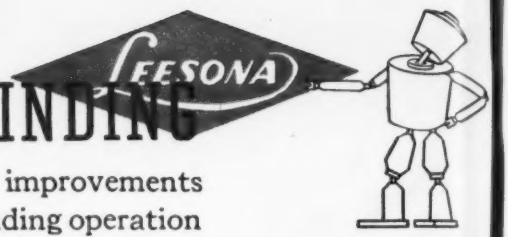
(Card Room at Manville Jenckes Corporation. Full complement of our Brushes on all cards.)

The FULLER BRUSH Company

3594 MAIN ST., INDUSTRIAL DIVISION 8C, HARTFORD, CONN.

THIS IS NO. 41 OF A SERIES ON

GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

(The first of a series of articles on tools used with Universal Winding Machines. Later articles will discuss tools for the No. 50, No. 60, No. 90 and the No. 250 Sizing Machine.)

SPECIAL TOOLS USED ON ROTO-CONER*

With each installation of Roto-Coners* the following tools are furnished:

Cone Holder Gauge	44-245-CAX
Builder Cam Lever Gauge	44-418-2CA
Slub Catcher Wrench	40-1084-4CA
MacColl Slub Catcher Clip	44-473
Spindle Bearing Adjusting Wrench	44-404
Cover Plate Clip R. H.	44-327
Cover Plate Clip L. H.	44-328
Tension Bail Safety Screw Wrench (Allen-Type)	WR-100
Telltale Safety Screw Wrench (Allen-Type)	WR-101
Stopping Lever Safety Screw Wrench (Allen-Type)	WR-102
Cam Safety Screw Wrench (Allen-Type)	WR-103
Traverse Shaft Coupling Safety Screw Wrench (Allen-Type)	WR-104
Coupling Cam Safety Screw Wrench (Allen-Type)	WR-106
Grease Gun (for Paper Coning only)	50-2725

Proper use of these tools will do much toward keeping the winding machine in perfect adjustment for quality work. Certain of them — such as the Safety Screw Wrenches — require no special explanation. The use of other tools, identified solely with the Roto-Coner*, is described below.

CONE HOLDER GAUGE

It is extremely important that the Cone Holder (or Tube Holder) be set in perfect relationship with the Rotary Traverse. The settings are made initially at our plant, and there should be no occasion for altering them, except when changing from one taper of package to another — such as from 9°36′ paper coning to 5°57′ wood coning or to paper tubing.

When making this change, the Cone Holder Gauge (44-245-CAX) is used, in order to obtain the correct setting. The upper plate of the gauge on which the tapers are marked is adjusted to the lower plate by means of the two screws to indicate the desired taper.

With the machine stopped, the Gauge is placed on the Rotary Traverse, as illustrated in Fig. 1, with the Locating Arm (A) resting securely on the frame. The Gauge is moved to the left until a lug which is on the under right-hand side of the Gauge touches the edge of the Rotary Traverse.

The left arm of the person doing the adjusting is used to depress the Starting Handle, which allows the Cone Holder to drop onto the Gauge. With the right hand, the Spindle Lock Pin Nut B (NU-304-CA) and the Spindle Holder Arm Spring Screw C (SC-1315) are loosened, permitting the Cone Holder to be brought forward to press against the setting blade on the Gauge. The Nut (B) and Screw (C) are then tightened.

For paper coning, it is not necessary to have an empty cone on the Holder, but for paper tubing or wood coning, the bare container should be on the Holder when the adjustment is made.

The markings on the Gauge are clearly identified and it can be adjusted for the setting of 9°15′ or 9°36′ Paper Cones, 5°57′ Wood Cones, or Tubes.

BUILDER CAM LEVER GAUGE

The Builder Motion is properly set before the winding machine leaves the factory, and no adjustment should be required unless a change is to be made in the taper of the winding package (or in the infrequent event of a broken part).

The re-setting is done with the Cone Holder raised to its highest position. On each Builder Stud Collar (A), Fig. 2, there are two screws (B shown, and another not shown) which, when loosened, permit the Collar to be adjusted so that the Builder Stud (C) will fit into the notch of the Gauge (D) when the latter is inserted in the bottom of the Cam Lever Slot. With the Collar held by hand against the Spindle Holder Bearing (E) and the Stud firm in the notch, the screws are retightened.

It will be noted there are two notches in the Gauge. The notch which is $1^{9}/_{16}$″ from the remote end of the Gauge is always used for the standard setting. The other notch, which is $1^{13}/_{32}$″ from the remote end, is used very infrequently on special yarns.

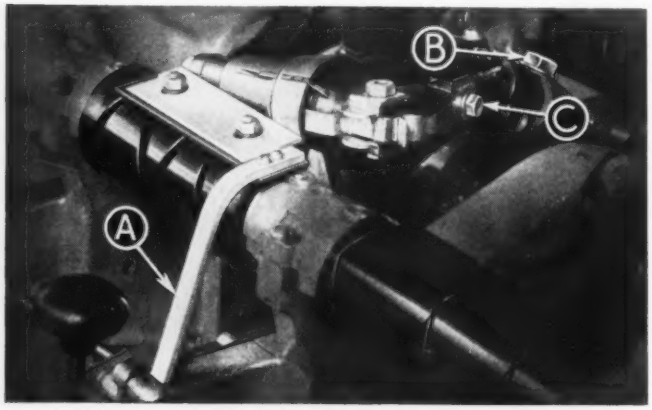


Fig. 1. Cone Holder Gauge 44-245-CAX

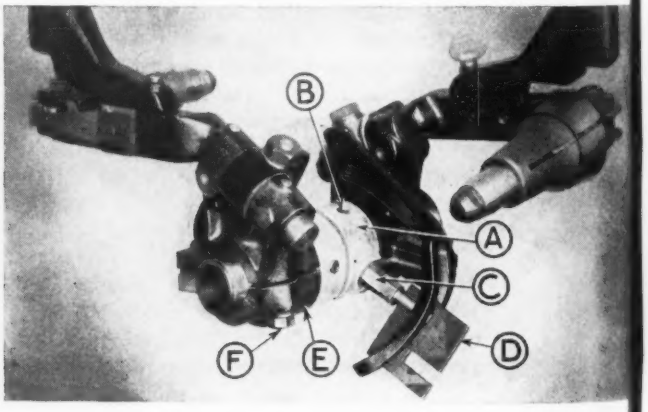


Fig. 2. Builder Cam Lever Gauge 44-418-2CA

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43-GMW-41

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PETE & BILL

CORRECTING WORKERS' MISTAKES

HOLD IT JOHN! NOW I SEE WHERE ALL THAT BAD WORK COMES FROM. AFTER ALL THE TIME I'VE SPENT ON YOU, I'D THINK YOU COULD MAKE A GOOD START UP. IT'S LOUSY! FUTHERMORE, IF YOU DONT- BLA, BLA, BLA, BLA!
HAVE IT YOUR WAY, MR JONES, BUT I'M DOING THE BEST I KNOW HOW. MEBBE I'M DUMB, BUT I JUST CAN'T SEEM TO DO IT LIKE YOU WANT IT. BETTER SHOW ME ONCE MORE.
1
COULDN'T HELP BUT HEAR YOU BAWL OUT THAT NEW MAN. YOU'LL NEVER BE ABLE TO KEEP OR DEVELOP PEOPLE BY BLASTING THEM. BETTER CORRECT PEOPLE TACTFULLY
YOU'RE TELLING ME, WHEN I'VE BEEN AT THIS GAME 20 YEARS? SOME FOLKS ARE JUST TOO DUMB TO LEARN! HOW WOULD YOU HANDLE THEM, SMART GUY?
2
MY WAY TO CORRECT WORKERS IS TO START BY BEING HELPFUL, GET FACTS BEFORE DECIDING, SHARE RESPONSIBILITY, DON'T MAKE THE PERSON FEEL DUMB, AND GIVE HIM CREDIT FOR INTELLIGENCE AND AMBITION.
I DON'T BELIEVE IN ALL THIS DIPLOMACY. PEOPLE NEED JACKING UP NOW AND THEN. YOU TALK LIKE YOU WANT ME TO APOLOGIZE TO THEM FOR THEIR MISTAKES.
3
YOU'RE MAD NOW, BILL. THINK IT OVER, AND SEE IF MY WAY ISN'T BEST. YOU'LL LOWER YOUR BLOOD PRESSURE, GET YOUR PRODUCTION, AND KEEP YOUR OPERATIVES AT THE SAME TIME.
YOU MODERN FOREMEN ARE A BUNCH OF SOFTIES, WHY A WORKER'S GOT TO EXPECT A DRESSING DOWN OCCASIONALLY OR HE'LL FORGET WHO'S BOSS. ALL WORKERS DON'T RESPOND TO GOOD TREATMENT
4

Is it ever good foremanship to bawl out workers for mistakes, or do they respond better to helpfulness and tactful correction? (Your published letters will be paid for—see panel on next page.)

Letters from Readers

Overseers Should Stick to Immediate Production

"The Overseer and Post-War Planning" Pete & Bill, August, 1943

Dear Pete & Bill:

We have executives in our plant that are paid to plan for the post-war period. Our job, as Bill has pointed out, is to keep the war orders rolling out of the mill as fast as we can. The boys fighting across the seas need these items, and I for one intend to see that we produce cloth as fast as the looms will weave it.

Executives are paid to look out for the interests of the company, and as part of their work, they should plan for the future.

What can we overseers do with post-war planning if we wanted to? We know very little about markets, about capacities of rooms outside of ours, and very little about the general trend in the textile field because our problem has always been the matter of production in our own room.

If we are to assist in post-war planning, let the company officials do most of the overall planning as to new fields and new products. Then, they can come to my department and say, "Can you make this type of fabric?" That is the part that we overseers can play in post-war planning — giving technical information when it is requested.

J. C. (Ga.)

Let the Overseer Advise on Post-War

"The Overseer and Post-War Planning" Pete & Bill, August, 1943

Dear Pete & Bill:

This country needs all the advice on post-war activities that it can possibly get. If it doesn't harness the solid, practical opinion of the operating

executives of industry to help pull the United States and the world up out of the bog of war and hate into which they have settled, then a real opportunity will have been wasted. If there is no clearing house for our superintendents and overseers to go to with ideas and suggestions, then they ought to set up such a clearing house themselves, and enlist the workers too. By all means let them lick the current problems and keep up production, but let them give of their working knowledge to shape a better future for our youngsters and for the generations yet to come.

F. U. L. (Va.)

He Votes for Vacations

"Vacations, Overhauling and Production"
Pete & Bill, September, 1943

Dear Pete & Bill:

By all means the vacations! Rest your man (and woman) power and rehabilitate your machinery at the same time. Management plays around with many little devices to cut absenteeism, and often passes up one big thing that would do the trick unassisted. While the machines are being put back into good running shape, the fellows who sneak a day now and then to go fishing or to a ball game can satisfy this urge without holding up production schedules. Once the urge has been satisfied that man may be as regular as clock-work for the rest of the year. But seriously, one big job on the equipment of most plants will save many minor shut-downs during the next six or eight months.

Yours for efficiency,
T. A. D. (N. Y.)

It Depends on the Mill

"Vacations, Overhauling and Production"
Pete & Bill, September, 1943

Dear Pete & Bill:

This cancelling of vacations, that you two jawed about in the September issue, is after all an individual decision for each mill to make with the best interests of its immediate job on war production in mind. Many mills don't need a week's time for a general overhaul. They have been doing a good job from week to week, and if they are running only six days out of the seven, then that seventh day gives them opportunity to fix things up to the best extent which their manpower and spare parts situation permits.

On the other hand, a mill that has been running full seven days a week, or one which had not done a good week-to-week maintenance job, could use that vacation time to advantage. Obviously unless there is reasonably good overhauling, breakdowns and defective goods will cut the usable output for the war effort, so you might as well stop and put the machinery in best possible shape. A third class of mills that could well have vacations are those not extensively engaged on war orders at all.

Of course, the policy of a vacation with pay has been spreading in recent years, but there are still many mills which do not practice it. Your discussion has particular interest for such mills as do usually give a paid vacation, since the skipping of the annual vacation has been accompanied by payment of the vacation salary as a bonus. That fact takes money matters out of the argument and returns the decision to the individual mill merely on the basis of whether its production is helped or not. Anyway the vacation season has passed!

JAKE SMITH (N. C.)

LETTERS TO PETE & BILL are paid for when published, without regard to length. We use letters (not over 200 words) discussing material in this department or any other pertinent matter. Contributions of greater than specified length may be given consideration as articles. Suggestions for the Pete & Bill dialogue are also welcome and if used will be paid for. If these pages interest you—contribute something to them to interest others. Address PETE & BILL, Textile World, 330 West 42nd Street, New York 18, N. Y.

Memories of Old Man Carelessness—By Martha Pittenger

NO. 10. DOWN THE LADDER TO FAILURE

Many people climb the ladder to success—but, its my purpose to send them down the ladder to failure. By failure, I mean anything from mere disobeying of safety rules, to a miserable rest between snowy sheets in a hospital bed, or maybe in a box six feet under.

Not long ago, an overhead hanger got hot, and Bill comes along with his mind more on the hanger than on the condition of the ladder he pushed up to the job. I was happy when I saw that he didn't look at the ladder at all "Go up fast!" I urged him.

X marked the place that needed his attention; another X marked the spot where Bill hit the floor. He started up the ladder like a monkey going up a coconut tree, not looking at the steps. His eyes were on the hanger, like the monkey gazing at the coconut.

As he neared the top, a step broke. Bill might have saved himself, but he held tools in one hand, and the other hand didn't grab anything else besides air.

Yeap, poor Bill, went down the ladder to failure—failure to avoid a lost time accident. Someone else had failed too, whoever knew the step was faulty, by not seeing it was fixed, or the ladder put away until it was fixed. But I naturally didn't help anyone do that!

Some folks try to help others be successful, and if they try hard enough, they average about two out of ten, but I can get all ten to be failures, 'cause they are bound to fail when they take me as a companion.

Employee-Morale Boosters

War Needs Impressed on Nashua Workers

Nashua Mfg. Co. has issued "A Call to Battle Stations"—a leaflet aimed at the workers and showing through many illustrations from the Army and Navy that materials made in the firm's plants are in active use on fighting fronts. This appeal to the workers is direct and spectacular and in line with the expressed desire of Governmental agencies that home-front workers should be made to feel the importance of their tasks.

"The munitions you make are vital to our fighting forces everywhere," the leaflet points out.

Plaque for Great Safety Record

Employes of the Greensboro (N.C.) Weaving Co. were awarded a plaque by J. F. Van Namee, Charlotte, N. C., safety engineer of the Liberty Mutual Insurance Co., for their record of maintaining $2,000,000 man hours continuous operation during the last four years, four months and four days without any lost time for accidents." Superintendent M. C. Ramm, of the plant, and E. H. Wilkins, assistant secretary-treasurer of the Burlington Mills Corp., of which the weaving company is a subsidiary, were also commended.

Dramatizes Fight to Outproduce the Axis

The workers of the Manning, Maxwell & Moore Co. Bridgeport, Conn., a plant that produces for the Navy, know that they are fighting the Japs and the Nazis directly because of a novel presentation recently put on by the company.

The company obtained from the public library a list of names of industrial plants in Germany and Japan which manufacture products similar to those of M. M. & M. A short recording was then made in the beginning of which was a Jap commentator speaking in a most belligerent tone and terms. This was followed on the recording by an interpretor, stating that the speaker was a worker in a particular factory in Yokahoma, and that he personally was prepared to outproduce any American worker in Manning, Maxwell & Moore, making the same product.

The recordings are played for the workers to impress upon them that they are in affect fighting the Axis workers in the same way that our armed forces are engaging the Axis' fighting men.

Suggestions Take Big Jump

The spur of war has been responsible for a flood of production suggestions, which, during the first five months of this year, netted employees of B. F. Goodrich Co. a total of $16,980 for their ideas, as compared to $16,255 similarly awarded during the entire 12 months of last year, according to Robert Schlemmer, head of the suggestion department. A total of 3,633 suggestions were received in the five months as compared to 4,746 for all of 1942. Total awards for five months was 1,266 as compared to 1,389 for all of last year.

BLIND FLORENCE MAHAN has two brothers serving their country with the armed forces. On the home front Florence hems sheets at the Illinois Industries for the Blind which produces bed linen for the government. She resigned a secure and comfortable job to take one that gave direct contribution to the war effort. She and other blind workers set up a 1.8% absentee record last year.

Women in Draper Office for First Time

Women have broken the 127-year tradition of the Draper Corp. plant at Hopedale, Mass., with the employment of 41 of their sex in the main office, where formerly only men had worked since the company was founded in 1816.

More than 500 women now are employed at the plant, 400 of whom have replaced men called into the armed services. Also for the first time, women now are used in the drafting room and experimental department.

Offer Employees Job Instruction Training

A course in Job Instruction Training is being offered employees of Pacific Mills at Lyman, S. C. More than 200 men and women have already completed the course and as many more are scheduled to attend.

The course teaches the class members how to instruct those who are under their supervision so that each new employee will know how to perform his duties before he begins his new job.

The classes are being taught by James Cobb, C. B. Hayes, Jr., Fred H. Parris and Jack Welborn, who were specially trained under WMC instructors.

Dept. of Labor Backs Safety Courses

In-plant training courses for 625,000 foremen to improve safety conditions in war production was started in September under the guidance of the U. S. Dept. of Labor. Courses will be directed by many of the 40,000 war plant supervisors who have completed safety training courses conducted in 116 engineering colleges.

"The new program of foremen safety training represents a fundamental shift in emphasis and a step on the way to ultimate on-the-job safety knowledge for 12,500,000 workers in war industries," said Secretary of Labor Perkins. (*Continued on next page*)

Training will cover specific safety problems of the plant and industry. Special agents of the National Committee will assist supervisors in class instruction. Outlines, guides, text material, references and supplementary bulletins have been prepared by the Labor Department's Division of Labor Standards. Consultation service is also offered to smaller war plants by the special agents of the Department of Labor.

Information about the free supervisory training courses may be obtained from the Division of Labor Standards, U. S. Department of Labor, Washington, in the leaflet entitled "What Would You Pay For 8000 Years Experience?"

Ware Shoals Allotted Nursery Fund

Among allotments recently approved by the Federal Works Administration was $12,238 for one nursery for 70 children and two child-care centers for 358 school children from May 1 to Oct. 31 at Ware Shoals, S. C.

Bravery on the Home Front

War breeds fortitude at home as well as on the battlefield. Mrs. Ruth Grantland, employe of a Chattanooga, Tenn., hosiery mill, was at her machine when the Navy Department notified her that her sailor husband had been wounded in action. She declined to leave her post, declaring she could do more for her husband by sticking to her job.

Diet as a Morale Booster

Labor management in some war production plants needs suggestions and aid so that war workers will have a well-rounded daily diet, Secretary of Labor Perkins has stated on the basis of a survey made by the Women's Bureau of the Department of Labor. The survey pointed out that the Government has mapped balanced diets for industrial workers and OPA's rationing branch is willing to make allowances for increased food allotments if labor or management will take the initiative and work out mass-feeding facilities.

"The Women's Bureau has formulated standards for eating periods for women in war plants—a minimum of 30 minutes time, a menu that includes hot, nutritious foods at a reasonable price and a pleasant place in which to eat away from the workroom," the report said.

In a recent survey of 183 war plants, Bureau agents found that 123 gave 30 minutes for lunch, not paid for in the worker's wages. One-fifth of the plants paid for lunch periods, ranging from 15 to 30 minutes. Of 177 plants reporting on facilities, about 60% had cafeterias or mobile canteens serving hot food of some kind. The findings reflected a wide variety of conditions —some fully meeting Women's Bureau standards. But the Bureau also discovered that thousands of war workers have no hot food during working hours, must eat lunch in 15 minutes, eat in the open, exposed to all weather variations, or in unsanitary rest rooms. Such conditions usually result in high rates of absenteeism.

NORTH STAR VICE-PRESIDENT CROWNS A MINNEAPOLIS QUEEN: As a feature of the North Star Woolen Mill Co.'s recent annual employee's party in Minneapolis, Delight Jaax, office worker, was selected by a board of judges as the company's 'Queen' to participate in the competition for 'Queen of the Lakes' in the Minneapolis Aquatennial. The title and crown was officially bestowed on Miss Jaax, a twenty-year old blonde, by Vice President Ward R. Hickok, as shown above. More than 700 North Star employees attended the party and 189 received awards for years of service, with 26 receiving the award for more than 25 years with the company.

Workers Donate Army "Peep"

A parade of employees of Virginia Woolen Mills, Winchester, Va., from the plant to the Winchester City Hall preceded the presentation by the workers one day recently of a "peep" to the Army. The workers contributed money for the "peep" in addition to their purchases of War Bonds which totaled $154,725 through June 30. The woolen company, which manufactures suiting and military woolens, currently employs from 600 to 700 persons.

Beats Absenteeism by Lottery

One southern textile mill has been fairly successful in curtailing absenteeism by instituting a lucky number contest. Employees with full cards (48 hours, as that is the plant's work-week) each week get their names tossed in a hat and the one drawn gets a $25 war bond. Each month, those with perfect attendance records for the month are eligible for another drawing in which the lucky number gets a $50 war bond.

Arranges for Company Pension

Beginning July 1, employees of the American Viscose Corp., Roanoke, Va., are protected against the hazards of old age and loss of health under a recently worked-out plan whereby they will receive retirement annuities in addition to a separate company financial pension based on past earnings, according to Leroy H. Smith, manager of the Roanoke viscose plant.

Arlington Hires Women as Dyers

Women are replacing men almost daily in many departments of Lawrence textile mills. One of the most recent changes was in the dye house and wet finishing room at Arlington Mills, when ten women took their places at dye kettles. In Arlington's wet finishing department women have taken over the operation of dryers, fulling mills, crabbing machines, etc.

Inspirational Meeting for Cone Employees

Bernard M. Cone, chairman of the board of directors of the Proximity Mfg. Co., Greensboro, N. C., presided at an inspirational program attended by 7,060 workers of the plant in recognition of their excellent production record.

KINKS & SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. The items should be short, preferably not over 300 words. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any item submitted. Items which are published will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York.

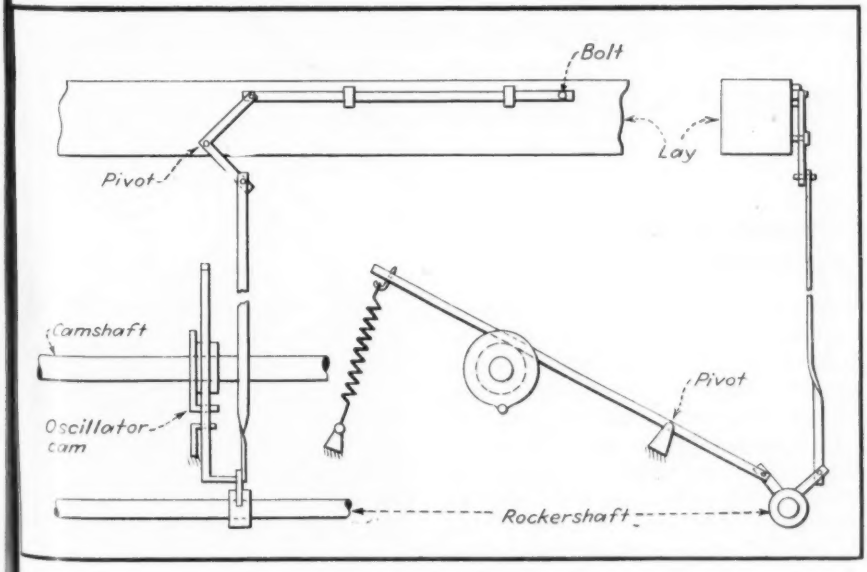
Device for Preventing Double Picks

THIS MONTH'S PRIZE WINNER

Double picks can result from the filling being cut by the temple cutter while the loom is running or when the loom is started carelessly with the shuttle in the right box. This is especially true when the filling yarn is a stiff material.

In order to avoid these defects, a device as shown in the accompanying sketch can be installed. In this case the thread-cutter heel does not come in contact with the lay, but with a bolt which is fixed on a moving bar. The motion of this bar is effected by a cam fixed on the camshaft.

When the shuttle is in the right box, the cam lifts the lever, the bar on the lay moves to the left, and the bolt is withdrawn and does not strike against the thread-cutter heel. As a result the thread cutter does not operate. When the shuttle is in the left box, the cam has let the lever down, the bolt has returned to its operating position, and the thread cutter can sever the filling ends.—Alfred R. Kandler, *Norwich, Conn.*



Device which prevents double picks.

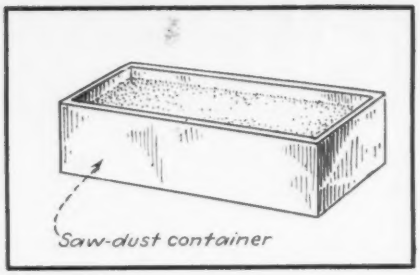
How to Clean Heddles

When a white viscose rayon or acetate rayon warp runs out, the heddles are usually found to be covered with white waste particles and lint, or they are soiled with chalk-powder and are sticky from sizing particles which collected while the warp was being woven.

In this case the heddles must be cleaned before another warp is put in the loom. The heddles should be taken out of the harness frames and put in a clean barrel, so they may be steamed with live steam or boiling water for an hour or longer. In this bath the hardened sizing waste which stuck to the heddles will soften up.

When the heddles are ready to be taken out of this bath, they should be lifted carefully and the water drops which collected on the heddles should be shaken off.

A rectangular container partly filled with a cleaning fluid should then receive the heddles. The cleaning fluid will do a better job if the heddles are given a slight shaking while they are in this bath. After that, they are put in a third container which has been partly filled with sawdust. The object of this operation is to dry the heddles from the cleaning fluid and



Rectangular box holds sawdust for drying heddles.

to give the heddles a slight rubbing with the sawdust.

Then take a good soft brush and rid them from the sawdust and you will be surprised to see what a good job you did, the old heddles will look neat and clean as new ones.—S.R.E. (*Pa.*)

Calculator for Mill Engineers and Electricians

Plant engineers and electricians will find the KVA-KW-HP Calculator a useful gadget to have on hand; it saves much time in making routine calculations involving electrical capacities. It solves single and three-phase problems expressed by the following formulas:

1. Single phase —

$$\text{Kva} = \frac{\text{Volts} \times \text{Amps}}{1000}$$

$$\text{Kw} = \frac{\text{Volts} \times \text{Amps} \times \text{P.F.}}{1000}$$

$$\text{Hp} = \frac{\text{Volts} \times \text{Amps} \times \text{P.F.}}{746}$$

2. Three phase—

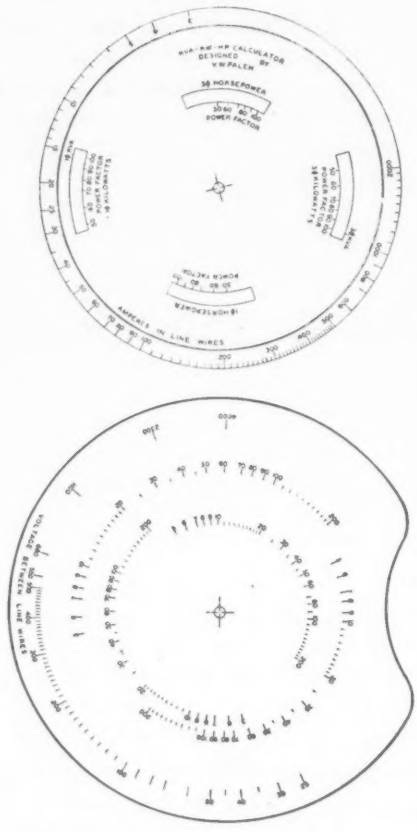
$$\text{Kva} = \frac{\sqrt{3}\,\text{Volts} \times \text{Amps}}{1000}$$

$$\text{Kw} = \frac{\sqrt{3}\,\text{Volts} \times \text{Amps} \times \text{P.F.}}{1000}$$

$$\text{Hp} = \frac{\sqrt{3}\,\text{Volts} \times \text{Amps} \times \text{P.F.}}{746}$$

The range of the calculator 5 to 200 (Kva., Kw., or Hp., as the case may be) can be extended easily to cover a range of 50 to 2000 merely by multiplying all values by 10. It can be used to find Kva., Kw., or Hp. from known values of amps and volts; similarly it will determine amps for given values of voltage, Kva., Kw., and Hp. Thus, knowing the size motor to be installed, an electrician can quickly determine amps—from this he knows what size wire to use for the circuit. Conversely, having read amps at transformer terminals—the calculator tells what load, in Kva., the transformer is carrying.

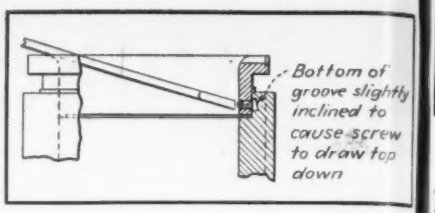
To assemble, cut out both disks (also small windows) and mount on cardboard with rubber cement. Punch the center holes carefully; then insert a small brass bolt in the holes. Washers, if used, will save wear and tear on the paper. The bolt should be tightened to give the proper pressure on the disks—they must hold their setting, yet turn easily. A drop of solder applied to the nut will make the assembly permanent.—V. W. Palen, Westinghouse Electric & Mfg. Co., *East Pittsburgh, Pa.*



KVA-KW-HP Calculator (approximately 1/2 size)

Diagonal Blade Screwdriver

For use in the upper end of needle cylinders where it is impossible to hold a screwdriver in line with the axis of a screw, as shown in the sketch, a screwdriver having the blade ground at a suitable angle to fit the work will be found better than an offset screwdriver. This is because it is effective through a half turn of a screw and avoids changing ends of the screwdriver as with the offset style. The longest side of the blade should always



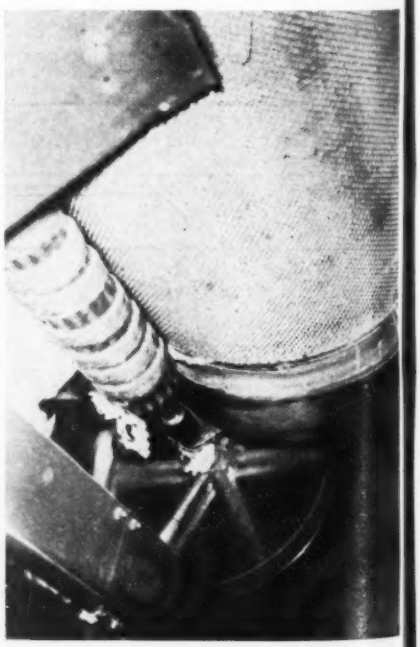
Diagonal blade screwdriver.

be kept in the bottom half of the screw head, thus avoiding injury of the slotted end. This diagonal screwdriver will also be found useful in other places where adjacent parts of a machine cause the ordinary screwdriver to be held at an incline to the work.—Walter A. Simond (*N.H.*)

Stripper for Condenser

The picker room in our mill had trouble with the overhead condenser screen collecting cotton. It was necessary for the fixer to climb up a ladder and clean the screen several times a shift in order to keep the condenser functioning properly. This job became quite a nuisance until someone thought of stripping the screen continuously by some mechanical means.

An effective stripper was devised by covering a wooden screen press roll with card stripper clothing so that the knees of the wires rotated into the screen. This improvised stripper not only kept the screen free of matted fibers but also gave the screen surface a high polish.—G.S. (*S.C.*)



A stripper roll keeps overhead condenser screen free of cotton.

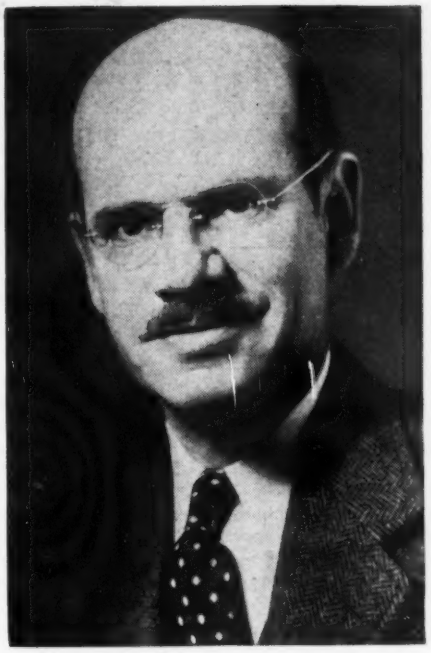
NEWS OF THE MONTH

Douglas G. Woolf Joins Textile Research Institute

Douglas G. Woolf has resigned as editor-in-chief of TEXTILE WORLD to become vice president and director of information of the Textile Research Institute, Inc., New York. He will direct all the information services of the institute, which include the magazine, *Textile Research*, of which Julian Jacobs continues as editor, and the abstracts and supplementary publications. He also will direct the projects which will be formulated by the economic research committee of the institute, under the chairmanship of Robert R. West, president of Esmond Mills, who recently accepted that responsibility. Mr. Woolf also will have charge of research in employer-employee relations, and will assist the president of the institute as liaison officer with various committees, research projects, and with members. His efforts will be directed particularly toward the post-war problems of the textile industry.

After leaving Cornell University in 1911, Mr. Woolf spent several years as a textile chemist in cotton bleacheries. He went to Persia in 1914 and installed there his own process for dyeing wool for Oriental rugs. He joined TEXTILE WORLD in 1916 as an assistant editor, and in 1930 succeeded Charles H. Clark as editor-in-chief. While he served in the latter capacity, TEXTILE WORLD earned an Associated Business Papers award for outstanding service to its industry. Mr. Woolf also won two personal Associated Business Papers awards for editorials, and received acclaim throughout the industry for forceful and conscientious writing. He is author of the book, "The Business Paper Editor at Work," and is a member of many textile and publishing associations.

In commenting on his new connection, Mr. Woolf stated: "I have a deep conviction that the future of the textile industry depends upon a completely open-minded approach to its post-war problems, involving not only competition from other industries for its markets, but also intra-industry competition among fibers and types of machinery. That means research. Fortunately, there is a current growth of interest in research in all parts of the textile industry, as evidenced by the formation of several new organizations. There is no limit for textile research; consequently there is no reason for competition among these new research enterprises. But there is need for coordination. It is my hope that the Textile Research Institute, Inc., representing as it does all branches of the industry and all sections of the country, may serve as a coordinating influence, by means of which all the organizations will work together toward a common objective: the elevation of the textile industry to a position of security for capital, management, and labor."



DOUGLAS G. WOOLF

Edwin D. Fowle, who as reported on page 64, succeeds Mr. Woolf in his former editorial post, comments as follows: "A strong proponent of cooperative research, as his editorials have consistently shown, Mr. Woolf should be in a position to contribute materially to an endeavor which is of great potential importance to the textile industry. He will be missed by his former associates, but TEXTILE WORLD's good wishes follow him, and this publication will enthusiastically watch and record his progress in his new line of work."

Mr. Woolf is a member of Textile Institute, of England; American Cotton Mfrs. Assn., National Assn. of Cotton Mfrs., Southern Textile Assn., and American Society for Testing Materials.

C.T.I. Focuses Meeting on Post-War

"Post-War Planning for Cotton Textiles" will be the theme of the 17th annual meeting of the Cotton-Textile Institute to be held in New York on Oct. 20 and 21.

Several prominent authorities on economic and industrial planning will address the opening session on Oct. 20. At that session also will be presented a report on the year's developments and the industry's attitude toward current problems from Dr. Claudius T. Murchison, president.

Departing somewhat from its usual program, the Institute at the afternoon session will sponsor several forums at which matters of outstanding interest to the industry will be discussed, and forums scheduled to date will deal with the situation in machinery supplies, post-war prospects for textile exports, and the steps to be taken to bring about an orderly termination of war contracts when the war comes to an end.

On Oct. 19, the Textile Square Club will tender a reception to the Marine Corps at the Hotel Astor to which all members of the Institute have been invited.

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Shortage of Tire Cord Foreseen

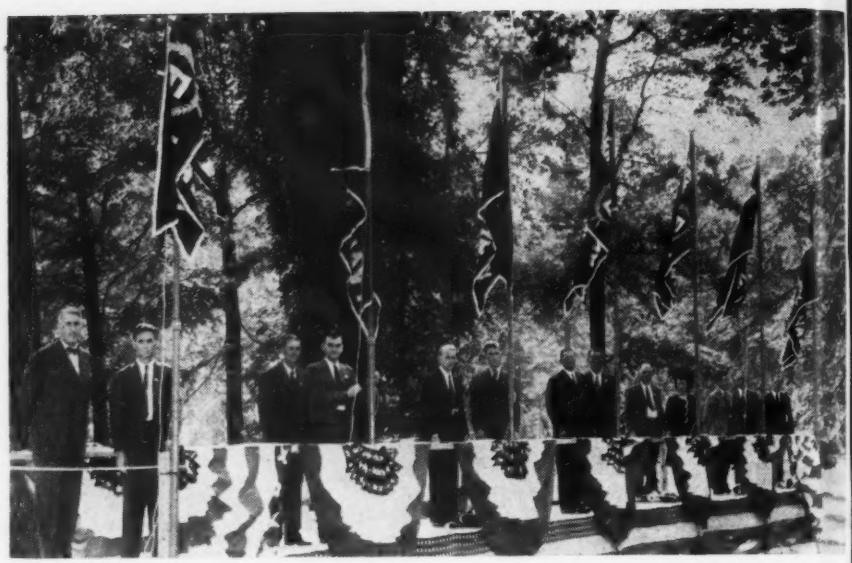
Inadequate supplies of both rayon and cotton cord threaten the 1944 tire program according to the warning sounded by Donald M. Nelson in a letter to the Truman Committee of the Senate. "One broad conclusion is unescapable", he adds, "namely, that our problem from now on is not one of deciding whether to use rayon or cotton but rather of being able to provide a sufficient quantity of both."

However, accompanying his letter to the Senate was the approved report of his assistants, James Jacobson and H. Leroy Whitney, recommending the conversion of an additional 40,000,000 lb. of manufacturing capacity to the production of high-tenacity rayon for tire cord. The report, which was made at the request of the Truman committee for further investigation of rayon versus cotton tire cord, showed a superiority of 25% for rayon

over standard cotton cord in synthetic tires, according to recent Army tests. In all, 844 cotton tires and 241 rayon cord tires were tested.

WPB has not indicated the way in which the conversion of an additional 40,000,000 lb. capacity for high-tenacity rayon will be carried out. Washington reports indicate that there will be a substantial cut in the civilian production of viscose process rayon yarn to allow conversion of this machinery, at least temporarily, to high-tenacity yarn.

Meantime, the Office of Civilian Requirements is concerned over the tightness of the civilian rayon goods market and it is admitted that civilians are bound to feel the shortage. Arthur D. Whiteside, director of OCR, has asked that a study be made of the rayon industry to step up production if possible. Twelve producers of cotton and rayon tire cord and rayon fuel cell yarns already have been directed by WPB to operate their facilities to maximum production regardless of any orders, regulations or directives to the contrary.



AVONDALE GETS SEVEN PENNANTS: At recent "E" Award ceremony in Sylacauga, Ala., headquarters for the Avondale Mills group, and the site of Eva Jane, Sallie B. No. 1, Sallie B. No. 2, Catherine and Central Mills. Seven pennants were presented, one for the Sylacauga group, one for each of the plants located at Alexander City, Birmingham, LaFayette, Pell City, Stevenson and Sycamore. Governor Chauncey Sparks of Alabama was master of ceremonies. Brig.-Gen. Allen B. Kimball, Commanding General, Jeffersonville QM Depot, made the principal address; Capt. H. J. Norton (S C) U. S. Navy, Commanding Officer, Naval Supply Depot, New Orleans, La., presented the pins and read citation. Hugh Comer, shown above at left, executive vice-president of the mill, with appropriate introductory remarks, read a statement from Donald Comer accepting the award.

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Wool Fiber Research

A discovery that may be of fundamental importance in interpreting many of the properties of wool fiber has been made at the National Bureau of Standards, using the electron microscope—an instrument which can resolve details down to one six-millionth of an inch.

In their study of wool fibers, Charles W. Hock and Howard F. McMurdie were able to resolve the fibrous structure of the cortical cells into still finer microfibrils, whereas the scale cells showed little or no internal organization. This difference between the fibrous structure of the cortex and the non-fibrous structure of the cuticle may account for the dissimilar behavior of these two layers when the fiber is immersed in swelling media in dyes and other reagents. This explanation is borne out by the fact that the differences in chemical composition of various parts of the wool fiber are believed to be slight.

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Textile Chemists Plan Meetings

The Technical Program Committee of the New York Section of the American Association of Textile Chemists & Colorists has selected the following dates for meetings during the 1943–1944 season: Oct. 22 (Intersectional Contest); Dec. 3; Feb. 4; April 7; and May 19.

Gray Work Dress for Sailors

Under a change in uniform regulations, enlisted men of the Navy soon will wear gray undress or working uniforms abroad ship. The gray working uniform will differ from the present white undress uniform only in color. Design and fabric will not be changed.

Specifications for the new undress gray uniforms are now being drawn by the Clothing Division of the Bureau of Supplies & Accounts. Large quantities of gray cotton twill are being purchased.

Blue dungarees will continue to be worn for work aboard ship and ashore, but issuance of the gray working uniform is expected to ease the wear to which the dungarees are subjected and therefore reduce the replacement requirements for that clothing item.

AT UNION BLEACHERY "E" AWARD: W. M. McLaurine, secretary- treasurer of ACMA was master of ceremonies. Lt. Col. C. C. Baldwin, Jr., of the Quartermaster General's office, presented the pennant to R. W. Arrington, president of Union Bleachery. Lt. Comdr. U. E. Sibley, U. S. N., presented the pins to employee representative W. A. Bishop.

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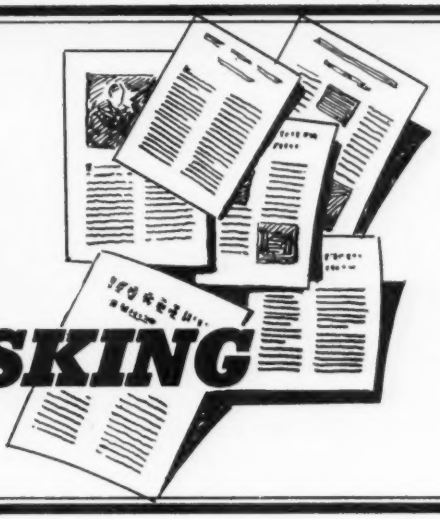
Technical Aid for Smaller War Plants

A technical advisory service to aid small plants has been established by the Smaller War Plants Corp. Richard C. Cooke, Regional Director of the SWPC, Region I, which takes in all New England, has appointed Malcolm S. Jones as technical advisory consultant to devote his full time to this service. Mr. Jones is a graduate mechanical engineer. His headquarters will be at 17 Court St., Boston 8.

(Continued on page 144)

FREE FOR THE ASKING



READERS interested in literature reviewed on this page may secure copies by using time-saving coupon on other side of this sheet. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y., being sure to give your name and company connection.

1. "Fiber from the Spinner's Viewpoint," is the title of an article appearing in the June issue of *The Whitin Review*, published by Whitin Machine Works, and should be of great interest to all textile men as it deals with the various properties of natural and man-made fibers. Material such as the relationship in breaking strength of various fibers as to that of cotton, relationship between twist per inch and breaking strength, and like material is discussed in this article.

2. The process of boiling off and preparing cotton, in woven and knitted goods for the bleaching and dyeing operations, is discussed in an article appearing in the August issue of *The Houghton Line*, published by E. F. Houghton & Co.

3. Increasing production in warp dressing and weaving is one of a number of subjects discussed in the June-July-August issue of *Davis & Furber News*, published by Davis & Furber Machine Co. Upkeep and maintenance of textile equipment is also covered.

4. Overhead handling of heavy beams for slashers and also the handling of heavy rolls at inspection, is mentioned in an article appearing in the August issue of *The Swirling Column*, published by American MonoRail Co.

5. Textile mill engineers will be interested in an article entitled "Here's What Happens When Voltage Dips or Jumps," appearing in the July issue of *Sylvania Lighting News*, published by Sylvania Electric Products, Inc. This article deals with the effects of light output from voltage increases or decreases and also contains a graph showing the effects of lumen output resulting from voltage dips and jumps.

6. Military uses of coated textile fabrics of various types are illustrated and described in a booklet entitled, "The Family of Monsanto Plastics," offered by Monsanto Chemical Co., Plastics Division. Photographs are shown and descriptions contained of the application of resins to army raincoats, hot water bags and to camouflaged ponchos.

7. Heat diffusers of the blower type are illustrated and engineering data given in a folder issued by Carrier Corp., describing types 46 P, Q and R heat diffusers used to heat and ventilate large areas.

8. Fabricated piping is described in a 64-page book on piping offered by the Flori Pipe Co. Interesting general applications of various types of fabricated pipes are covered.

9. "The Annual 1942 Review," covering Allis-Chalmers engineering progress, has been issued this year in a 64-page edition, by Allis-Chalmers Mfg. Co. in which is described advancements in various fields of engineering such as blowers and compressors, electrical equipment, feedwater treating and many other fields.

10. Infra-red drying is discussed and a number of applications illustrated in a folder offered by Wil-Son Mfg. Corp.

11. "Electric Motor Maintenance," is the title of a 6-page folder offered by Keystone Electric Co. covering various phases of maintenance of electric motors. Special consideration is given to bearings.

12. Textile executives interested in man-made fibers for the post-war period will find an illustrated booklet entitled, "Velon, the Miracle Material for the World of Tomorrow," of tremendous interest. Photographs of Velon fabrics in actual color are shown and numerous interesting applications of Velon are illustrated.

13. "Industrial Humidifying," is the title of a folder offered by The Bahnson Co. and should be of interest to textile mill engineers as it describes various types of industrial humidifiers and gives data as to their capacity.

14. Increasing production through the use of light-reflecting floors is discussed in a 24-page book entitled, "Light From Floors Speeds War Production," published by Universal Atlas Cement Co. Increased lighting of underside surfaces by 61% has been claimed and vertical work surfaces are increased in illumination by 20%.

15. Increased cleaning of long staple cotton and rayon is discussed in a folder entitled, "The Superior Cleaner," offered by The Centrif-Air Machine Co., Inc. This type of cleaner is illustrated and its features enumerated.

16. Methods of replacing worn-out windows with glass brick are described in detail in a new booklet released by Insulux Products Division of the Owens-Illinois Glass Co. Specifications, technical data and typical construction details are included as well as photographs and details of many industrial installations.

17. Machine maintenance with metallizing is covered in the July-August issue of "Metco News," published by Metallizing Engineering Co., Inc. Rapid methods of building up worn or corroded parts with sprayed metal are described in this paper and should be of interest to mill maintenance men.

18. Insulation materials are discussed in a new 60-page catalog published by General Electric Co. in which the entire line of G-E insulating materials is covered. Items such as varnished cloths, varnishes, cotton sleeving, etc. are described.

19. Master mechanics and maintenance men in textile mills will find the Rhoads Belt Length Calculators, offered by J. E. Rhoads & Son, of great assistance to them in calculating accurately the length of leather belts.

20. "Dust Collecting in Industry," is the title of a folder offered by Peters-Dalton, Inc., in which is illustrated several different types of dust collectors suitable for use in mill machine shops and for general purposes.

(Continued on next page)

21. Mill purchasing agents will find the 180-page "Motor Buying Data" loose-leaf booklet, offered by the district offices of Westinghouse Electric & Mfg. Co. of great assistance to them. "Control Buying Data," the title of a motor guide, also is available through the district offices and contains 276 pages of data covering a wide variety of controls and accessories for various types of electric motors.

22. "Rayon Goes to War," is the title of an illustrated folder offered by American Viscose Corp. This folder describes and illustrates in a graphic manner the part that rayon is playing in military fabrics, such as in making cargo chutes, mine-laying chutes, and fragmentation-bomb chutes.

23. Lubricating oil purifiers and reclaimers of several types are described in a bulletin offered by Youngstown-Miller Co. This bulletin covers YM oil reclaimers with capacities ranging from 2½ gal. in 70 to 90 min. to 120 gal. in the same length of time. These reclaimers restore all types of oils, such as used in power-plant motors and also those for lubricating purposes.

24. Purchasing agents will find a book just published by Manning, Maxwell & Moore, Inc. of great assistance to them in purchasing material, as it is intended to give a sound working knowledge of the controlled materials plan. This booklet entitled, "Controlled Materials Plan," contains an explanation of the purposes, principles and procedures involved in obtaining materials required to carry on normal manufacturing operations.

25. A reference bulletin explaining recording and controlling of wartime processes, is issued by The Bristol Co. Bulletin 9M006 is actually a buyer's guide of air and electric operated controllers, recorders, indicators and telemetering recorders and controllers.

26. Textile mill engineers will find a 24-page booklet entitled "How Electronic Tubes Work", offered by General Electric Electronics Department of General Electric Co., useful as it describes in a non-technical manner the basic working principles of electronic tubes.

27. Textile maintenance men will find the New Ideal Handbook No. 143, offered by Ideal Commutator Dresser Co., of great assistance to them as it contains much useful information on the maintenance of motors and generators which are operating continuously. Industrial electrical equipment and variable speed transmissions are also covered.

28. Diesels for stationary service are discussed and also improvement in diesels are described in Bulletin 3000-A, offered by Fairbanks, Morse & Co.

29. Bearing information is contained in a catalog listing offered by Keystone Carbon Co.

30. Textile chemists will find the new folder discussing properties and uses of Dresinates water soluble resinates, used as emulsifiers in making various types of soluble oils for textiles, of great assistance. This folder gives the properties of liquid and powdered Dresinates and tables showing the stability of emulsions.

31. Engineers will be interested in a booklet published by Brooks Equipment Co. describing the use of an industrial universal joint which operates efficiency at angles from 0 to 360° in any plane. A table of useful information is contained and torque load capacities and other pertinent data about universal joints are given.

32. Radiant heat drying lamps, their advantages, and performance characteristics are discussed in a 12-page booklet offered by Westinghouse Lamp Division, Westinghouse Electric & Mfg. Co. Specific data is given for the three general classes of application, namely, evaporation of water or other solvents, drying, and increasing temperatures of materials to facilitate manufacturing processes.

33. "Water Treating" is the title of a reprint offered by D. W. Haering & Co., Inc. The paper is intended to assist a person with water treating problems. The different kinds of corrosion and scale encountered in boilers and cooling systems are discussed, as well as an explanation of the external and internal water treatments used. Corrosion prevention by vapor phase treatment in steam making units is one of the new developments described.

34. Flexible tubing for use on steam lines operating at pressures up to 50 lb. per sq. in. and temperatures of 280 deg. F. is covered in Catalog No. 113, issued by Titeflex Metal Hose Co. Also contained in the catalog are instructions on how to cut flexible metal tube and to attached fittings. Other general information governing installations is covered.

35. Hercules Chemist, issue No. 12, published by Hercules Power Co., contains an article entitled "Rosin in Soap" which may be of interest to textile mill men. Tables are given showing the effects of rosin on the detergency of soap. Another article deals with Ethyl Cellulose Plastics in which the properties of these plastics are listed, such as accelerated aging test, toughness, hardness, moisture, absorption.

36. Mill engineers will be interested in an article entitled "Light Reflection from Glass During Blackouts," in *Truscon Building Maintenance*, published by Truscon Laboratories, Inc. It also contains a check list for exterior building maintenance, which will be helpful to mill engineers in keeping their buildings in the best of shape.

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MILL MEN'S ROUND-TABLE

With meetings of operating executives curtailed because of the war, there is a definite need of a meeting place where mill men can discuss their problems among themselves. The Mill Men's Round Table is designed to supply this need. It is open to all readers for discussion of any and all subjects relating to mill management and operation. Bring your problems to the Round Table. Give other mill men the benefit of your experience, and get their ideas in return. To encourage frank and open expression of ideas and opinions on controversial subjects, names of contributors to the Round Table will not be published, but will be held confidential, if so requested. However, source of contributions must be identified as evidence of good faith and to permit payment for items published. Address contributions to: Editor Mill Men's Round Table, TEXTILE WORLD, 330 West 42nd St., New York. Opinions expressed in this department are those of the writers and do not necessarily reflect the opinions of TEXTILE WORLD.

Training Loomfixer Quickly

Whether G.E.B. makes an attempt to train women as all round loomfixers or he attempts to make specialists of them in certain phases of loomfixing (as he suggested in the June issue), I am afraid that, due to certain scientific truths, he is due to be disappointed and find it a beautiful pipe dream.

Loomfixing is mechanical work, and while women are superior to men in most things, mechanical ability is not one of them. With the exceptions that have that ability, the skill may be comparable with that of male workers, but it is not bolstered up by years of mechanical experience in industry and by boyhoods natural inclination for tinkering with things with "wheels." Mechanical aptitude is something natural –one is born with it. The woman that has it is rare indeed.

A study of the female anatomy shows that women are handicapped physically for the pursuit of mechanical trades. Besides being knock-kneed, women are "knock-elbowed" as well. The bones of the forearm are attached to the elbow somewhat differently from in the male. This causes the joint to form an angle instead of a straight line, so that throwing a ball, using a screwdriver, hammering, or pulling on wrenches become clumsy actions with uncertain results.

Some of her muscles are differently placed from in the male so that some mechanical operations required in loomfixing would be a severe physical strain on a woman. In her hands we find different finger proportion than in a man, and with the greatly lesser "squeeze" power of her hands, tightening bolts and nuts becomes a problem. Most loom motions have considerable vibration and the female loomfixer would have plenty of trouble from constantly loosening bolts and nuts.

Women are superior in physical endurance, but it is the endurance required for monotonous routine work and not work where frequent decision and frequent change is part of the job. It is for this reason that industries forced to employ women workers routinize work as much as possible for them. Routinizing of loomfixing is not possible, due to the fact that even similar repair jobs have their variations.

Sometimes things go wrong when an expert loomfixer is adjusting a loom. Other times the loom will not react correctly in spite of the best of handling. The emotional build of a man will give him more patience with the obstinate loom—the worst would be a few "cuss" words. But to a woman that would be the time for tears and hysterics.

My suggestion to G.E.B. is to buy the best possible supplies for the loomfixers he has—standardize picker sticks, lug straps, pickers, etc.; and have the makers of supplies deliver them ready for the loom—training such manpower available to do the mechanical work of loomfixing, such as renewing harness straps, keeping bunter leathers up to correct amount, and other simple tasks which can be done by any male worker and he may find one whom he can train as he suggests. Under these conditions he may find his fixers willing to take a few more looms.

O.C.P. (*N.J.*)

Slasher Blankets and Rolls

Recently I have heard about two new developments in cotton slashing, but haven't been able to find any mill which has had any actual experience with either one of them. I am sure that some of the readers of the Round Table are familiar with them and must have some ideas as to how well they are working out.

First, I have heard that a cotton blanket has been developed to take the place of the wool blanket usually employed for covering the squeeze roll on cotton slashers. Second, I have heard that some mills are experimenting with rubber-covered squeeze rolls.

It is hard to believe that a cotton blanket will give as good results as a wool blanket, but I may be wrong, and I hope somebody who has tried cotton blankets will let me know how they worked out.

I have a lot of questions concerning use of synthetic rubber squeeze rolls and know that other mill men must have too. For example, do they give as good penetration as the wool blankets and what are the cost and life

QUESTIONS & ANSWERS

Travelers for Long-Draft Spinning

Technical Editor:

We are not trying to put all the blame on the traveler, but an improvement always helps in the producing of a better yarn, also a greater quantity thereof. Therefore, we are anxious to obtain as much information as possible in this connection.

We have had some discussions recently with regard to the proper type of travelers to be used on ring frames producing yarns by the long-draft system.

At the present time, we are using the following travelers, but the results obtained at the spinning frames are not as satisfactory as what they might be:—

12s carded warp—No. 8 Sq. Point—3 circle —#2 flange;

32s carded warp—No. 4/0 Round Point—1½ circle—#2 flange;

50s combed warp—No. 7/9 Round Point—⅝ circle—#1 flange.

Data on yarns spun, ring diameter, etc., are as follows:

	50s carded	32s carded	12s carded
Diam. of Ring.....	1 5/8 in.	1 3/4 in.	2 1/2 in.
Twist per inch.....	28.00 or 31.81	25.5	15.57
Spindle Speed	9600	9200	7300
Stock	1 9/16 in. Pima; 1 1/4 in. American	1 1/8 in. Am.	15/16 in. Braz.

(8916)

Your present set-up represents normal conditions as regards ring diameter, spindle speed, and twist. Also, the ring flange and traveler circle choice should be all right. The traveler number is a little on the heavy side; however, if the yarn will stand the additional tension, the bobbin will be somewhat firm with a good yardage. It will also unwind better at the high speeds during spooling.

Unless something is definitely wrong with the construction of the traveler itself or the ring that it runs on, you should look elsewhere for the cause.

However, it might be well to check the travelers for uniformity of hardness and opening between points. Present-day conditions make it rather difficult to obtain materials equal in quality to those used in the past.

You should also inspect the rings to see that no deep grooves have been worn in the web of the ring by the points of the traveler. Sometimes the improper choice of traveler will result in scoring the web after a short period of use.

If you are having some particular trouble, such as ends down at the doff, unthreading of the traveler, or too short a traveler life, and will advise us what the difficulty is, we may be able to make further suggestions.

Blending Wool Stock

Technical Editor:

We are producing a 30-oz. fabric using a mix of 44s and 58s wool that have been raw stock dyed. The finished cloth has shaded places as if the stock was not well mixed. Will you please give us suggestions concerning the blending of our stock so as to eliminate rowey and shaded places. (8919)

Improper preparation of the raw stock before dyeing and the blending of the mix in the picker room are causes of shaded goods. Mistakes made in blending and picking cannot be corrected in subsequent processes.

The aim in blending colored wools is to create a mix in which even wools of radically different physical structure are not distinguishable in the yarn. Raw wool must be well scoured. Partly scoured wool will dye unevenly and unless properly blended will cause specky or shaded cloth. After scouring, wool should be dryed at not over 160°F. Overheating can make fibers harsh and brittle and difficult to handle at subsequent processes and cause unevenness and waste. All vegetable matter should be removed from the wool by dusting as soon as possible after drying. Excessively burry wools must be carbonized; otherwise some burrs will drop out in the mixing, blending, and carding processes while others will get through to the roving processes will cause uneven yarn.

After the stock is scoured, dried, and dyed, it is ready for mixing, the following processes being required: weighing of the lot, laying of the blends, picking, oiling and blowing. These operations should be carefully carried out to obtain the best results.

Place the weighing process in the hands of a reliable, experienced weigher, as a variation of a few pounds in the weight of a lot can cause off-shades. In laying out the blend, be sure that the person on this job makes layers of even thickness, and each layer of the right stock, and that each of the various kinds of stock is properly distributed in the pile. Thin layers are better than layers that are too thick, since the resulting blend is more even. In blends where a comparatively large quantity of one type of wool is to be mixed with several small quantities of dyed or undyed stock, a temporary mix is best. In a temporary mix split the large stock and blend part of it with the small lots, then add the balance of the large lot or lots and blend entire stocks. It is also important in feeding a mix to the picker that the floor mix be cut from top to floor vertically to obtain like portions of all layers.

Scouring Knit Goods

Technical Editor:

We should like to get a formula to scour a 50% wool, knitted tubular fabric which must later be washed and not shrink over 3% in length or width. At present we are experiencing considerable difficulty in controlling our shrinkage within these limits. (8931)

Several mills scour this type of fabric in rope or string form in an ordinary knit-goods washer equipped with squeeze rolls. The goods are first wet out in warm water. Next they are scoured for ½ hr. at 140°F in a solution containing 3% of soap (dry basis) and 3% of soda ash on the weight of the fabric. Then the bath is dropped and a fresh solution made up of 2 to 3% soap and 3% soda ash, and the fabric is scoured for ¾ hr. The goods are then rinsed thoroughly until free from soap and alkali, as indicated by testing with phenolpthalein. After rinsing, they are extracted and dryed on a loop dryer.

Regain in Blends

Technical Editor:

Our mill has always operated on cotton. Recently we changed over to blends, our present one being 50% cotton, 25% viscose, and 25% Teca. In forming laps at the picker we are having trouble in making weight allowances for regain, as we have

not been able to determine what percentage regain should be allowed for this blend.

If standard regain is not kept in each operation from the picker to the frame can we bring it back to standard regain when the yarn is in package form or after it has been woven into cloth? (8938)

Although it is neither necessary or advisable to hold standard moisture conditions throughout the various stages in the manufacturing processes, some intermediate regain standard should be determined and held. Fiber with the proper amount of moisture is more easily handled and produces superior yarn.

At the opening and picking it is now possible to regulate and hold predetermined moisture levels. For the blend mentioned it might be well to run with a relative humidity of approximately 40%. In regain this would roughly be equivalent to 6.0%. Use of return air condensers, which make direct fan exhaust unnecessary, makes moisture control in opening and picking quite possible.

Through carding, spinning, warping, and weaving the relative humidity should be gradually built up, as this will be required if the best running conditions are to be attained.

The fabric at standard regain should contain approximately 8.0% of moisture. This can be put into the cloth after it has been woven by exposure to a properly conditioned atmosphere for a sufficient length of time. Often this is done at the cloth room. Cloth sent out by a mill when it lacks allowable moisture content represents a direct loss of profits.

Drafts and Twists for Spun Viscose Rayon

Technical Editor:

What drafts and twists are to be recommended for spun viscose rayon yarns? We have both long- and short-draft frames and have been accustomed to running standard cotton drafts and twists on counts of 20s to 30s for warp and filling. We use a 4.25 twist multiple for 20s, and 4.00 for 30s with 1 9/16 in. rayon staple and when we increase the multiple the yarn gets weaker. (8920)

For conventional-draft frames on spun rayon the desirable range of drafts when running double roving is 10 to 13. On long-draft frames, using double roving, 16 to 18. When running single roving, 7 to 8 is better for conventional-draft frames, and 8 to 12 for long-draft frames. These figures are only approximate guides, giving a safe range of drafts for the average staple and yarn number.

Twist when too high, tends to shear

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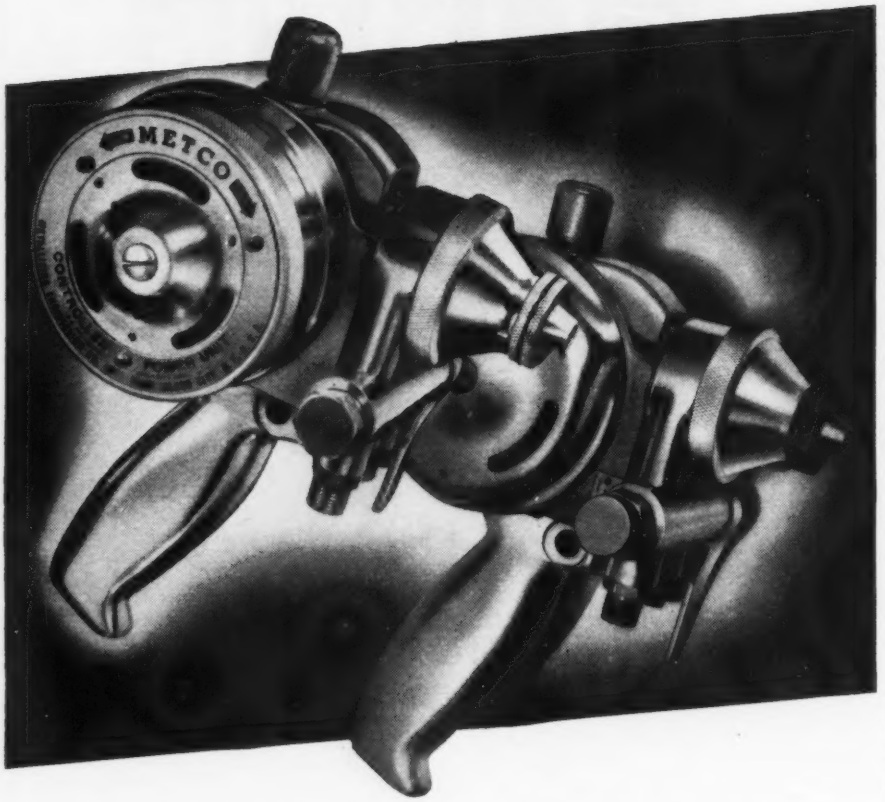

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the fibers; when too low, the fibers are likely to slip. The range of twists depends upon the denier and staple length. As a guide, in a 30s yarn, 1.5-den. 1 5/8 in. staple, a twist multiple of 3 gives the best strength. Higher counts and coarser staples require higher twist multiples. A 20s yarn using a 3-den. 1 5/8-in. staple, requires a twist of 3¼, and a 16s yarn of 5-den., 1 5/8-in. staple, requires a twist of 4.

Filling Sloughs Off

Technical Editor:

Kindly tell us how to prevent our filling from sloughing off the quill, by adjusting the loom or shuttle. We do not like to wind our soft fillings with extra tension to prevent this condition, as the character of the soft yarns we use are changed to such an extent as to vary the appearance of the cloth. (8928)

If filling is wound on bobbins correctly, pulling off can occur only because of excessive pick or insufficient check. To set the loom so as to remedy the slough of filling from the quill, make the following changes: Reduce the power on the pick for the left-hand boxes to the point where loom does not bang-off and the magazine operates properly, and adjust check on right-hand box to stop shuttle smoothly. If the filling still sloughs from quill, have the shuttle enter left-hand box harder, either by picking harder from the right-hand box or by reducing the check in the left-hand boxes. This will pound the filling tighter on the quills. Check in the left-hand boxes can be reduced by reshaping the binders, shortening the check strap, or using more or harder bumper.

Tensioning Top Beams

Technical Editor:

We would like to secure information on the proper way to tension top beams. Our fabric has a 100/2 mercerized cotton bottom beam, and a 11/2 mercerized top beam. The top beam has a steel drum in each head and we tension the warp by running a leather strap around the drums and hook it to a spring. Our trouble occurs if the top warp is woven tight enough to remove small loops that form; we then get broken ends in the finishing when the fabric is run tightly over several machines. (8929)

It is frequently considered an incorrect practice to use leather straps or rope to tension the top beams. A small link chain may be used, the thickness of the chain depending on the weight of the beam and the amount of yarn being delivered. Another incorrect practice is to adjust the tension spring so that the yarn will pull from a dead end of the chain instead of the spring end. The accompanying sketch shows how top beams should be

Army Supplies Float in Textile Bags

How to carry clothing and dehydrated foods through jungle streams was a problem for the Army—but not for long.

Waterproof bags designed by the Quartermaster Corps protect supplies in the most humid climate. Compact and light in weight, easy to carry, yet give complete protection when thoroughly wet during the fording of a stream.

There is one bag for clothes . . . another for foods. Both are made of a tough, weatherproof sheeting fabric. A flat-braided cotton tie cord is used to close the bag.

Mills making fabrics for the new waterproof bags depend on Butterworth Machines at every step in the Wet End of Textile Finishing.

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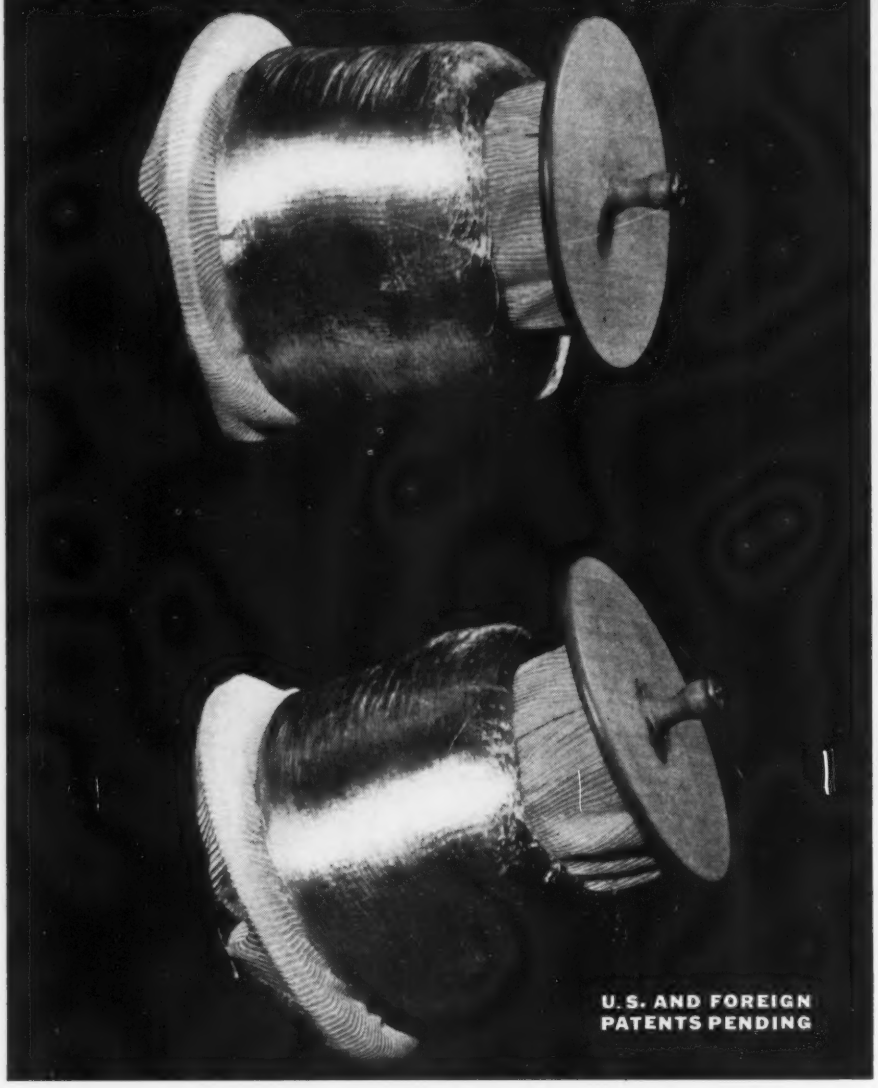

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Once installed, all operations are simple and uniform, and shifting from one denier to another is made on the same unit without time consuming changes in set up.

Run out drag is virtually eliminated due to the mirror finished cap edge and spring tension is automatically controlled by a fibre insert which is supplied with each unit.

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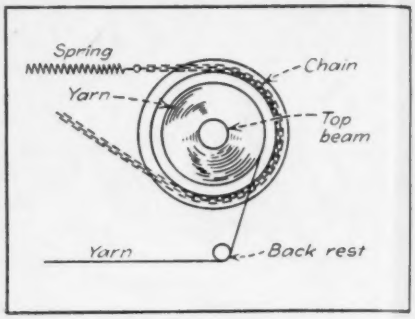

Correct method of tensioning back beam.

tensioned. By using the proper size chain, and the method of hook-up shown, there will be little danger of tight and loose delivery from the top beam.

Tolerances for Water Impurities

Technical Editor:

We are interested in finding out the tolerances for water impurities beyond which it is profitable to use corrective measures for purifying water. We dye cotton, raw stock, and do some jig dyeing of fabrics. In addition, we have a steam plant to furnish steam to our slashers and dryers and it is possible that we could realize savings in materials and affect other economies by treating our water to reduce the amount of impurities present. (8933)

A paper on water treatment by S. T. Powell and H. E. Bacon, consulting chemical engineers, presented at a meeting of the Textile Division of the American Society of Mechanical Engineers in 1940, contained a table giving tolerances of impurities in parts per million. Amounts above these tolerances may indicate that some sort of water treatment would be profitable.

To treat water of hardness encountered in textile areas, zeolite softeners usually are employed. Recently developed zeolites have a much higher exchange value and higher flow rates than older types. To remove turbidity and color, chemical treatment, coagulation, settling, and filtering are resorted to; a recent development is a method of retarding the settling of the precipitate and thus obtaining more complete precipitation.

Tolerances for Impurities in Water for Various Textile Uses

	General	*Dyeing*	*Wool Scouring*	*Rayon Mfre.*
Turbidity	5	5	—	0-0.1
Color	20	5-20	—	0
Hardness	—	0-10	—	0
Iron	0.25	0.25	4	—
Manganese	0.25	0.25	0.005	0

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THE STORY OF QUAKER PROCESS ENGINEERS

You'd naturally expect the man who sells you textile chemicals and processing compounds to be able to make helpful suggestions on their use and application in your mill. But, if this is *all* you've come to expect, your first experience with a *Quaker Process Engineer* will undoubtedly be somewhat of a surprise. For these highly trained men are constantly distinguishing themselves on the production front by rendering "service *beyond* the call of duty."

For example, one of our men recently devoted several days to the designing of a new separator for warp ends for a customer who was stymied by excessive sticking on the drying cans. Another Quaker Process Engineer, *working with our laboratory, traced the cause of a low tensile strength experienced by a weaver of spun rayon fabrics.*

In fact, it is not at all uncommon to find a *Quaker Process Engineer* serving as a consultant on the layout of a new processing system . . . or sitting in with a laboratory or engineering staff to work out a new manufacturing process.

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To qualify as a **Quaker Process Engineer** *a man must be a graduate chemist and/or engineer and must have had at least five years' experience in process and production work in the textile manufacturing industry. He is, therefore, intimately acquainted with production problems and the application of scouring, dyeing, sizing and finishing assistants . . . in fact, with all processes which Quaker Chemical serves with its products.*

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Why do we permit—even encourage—our men to devote so much time to "service beyond the call of duty"? Simply because our whole business philosophy here at Quaker is based on a spirit of friendly helpfulness . . . and the conviction that, in the long run, we will benefit by serving our customers to the fullest extent of our ability.

It is part of the same spirit of service to industry which led us, years ago, to dedicate our extensive research facilities to the task of locating processing problems which we felt had never been handled quite satisfactorily . . . and of developing new products or processes to overcome these past troubles.

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The facilities of our research laboratory—and the many new type products which have come out of it—stand behind your local* Quaker Process Engineer *. . . to help him solve your processing problems or improve present results.

So why not call him in and get acquainted? You'll find him an interesting, friendly sort of fellow . . . with a fund of useful knowledge on which you can draw. Simply write or wire—

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CONSHOHOCKEN, PA.

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TENNANT *meeting* TWO WARTIME NEEDS

TENNANT Floor Machines are working in mills and defense plants from coast to coast.

American Viscose Corp., Textile Unit, Marcus Hook, Pa., like many other leaders in the textile field, use the TENNANT System to obtain smooth floors that are easily kept free of lint and oil spillage.

●

Our field representatives are handicapped somewhat by travel restrictions in making personal calls. However, when you need help, Tennant service is available without cost.

1. In ORDNANCE Production—

we are operating at top capacity as prime contractors in manufacturing gun sights. TENNANT Precision Equipment and Engineering Skill—developed in making TENNANT Floor Machines—have proved fully equal to the exacting accuracy standards required for this vital War Materiel. This unusual production experience promises interesting new developments in TENNANT Floor Machines—after Victory!

2. In Maintaining SAFE, Clean Floors—

—to help speed War Production and reduce accidents, TENNANT Floor Machines are working night and day in War factories, mills, and offices. It is well known that greater production is achieved in plants where floors are kept bright and clean.

Repairs for your Tennant Machines as well as accessories and materials required to keep your floors in best condition are readily available.

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TENNANT SYSTEM OF INDUSTRIAL FLOOR MAINTENANCE

MILL MEN'S ROUND TABLE

(*Continued from page 125*)

of synthetic rubber rolls as compared with blankets.

I would like to get whatever information I can on either the cotton blankets or the synthetic rubber squeeze rolls. In return, I would be glad to give my ideas on any phase of cotton slashing that I am familiar with.

H. G. (S.C.)

Can You Top This?

Strictly speaking, I am not a mill man now, and this letter is different from most of those which I have seen in the Round Table. However, I thought you might like to use it. It refers to a complaint which I received recently when I called on a mill which had installed some of our latest machines.

The superintendent told me the machines were running pretty well, but suggested that I talk with the operative. The operative had a different story. He said, "Oh, they are running, but they have too many 'bugs' in them." On a new type of machine, I expect some complaint, but I thought this was an exaggeration. However, I asked the operator to tell me what the "bugs" were, so we could try to eliminate them. You can imagine my surprise when he told me they were the darn little black wheat bugs that come in out of the fields at night attracted by the lights in the mill. They got tangled up in the sliver. Then whenever they went through the rolls and mashed, the rolls lapped up.

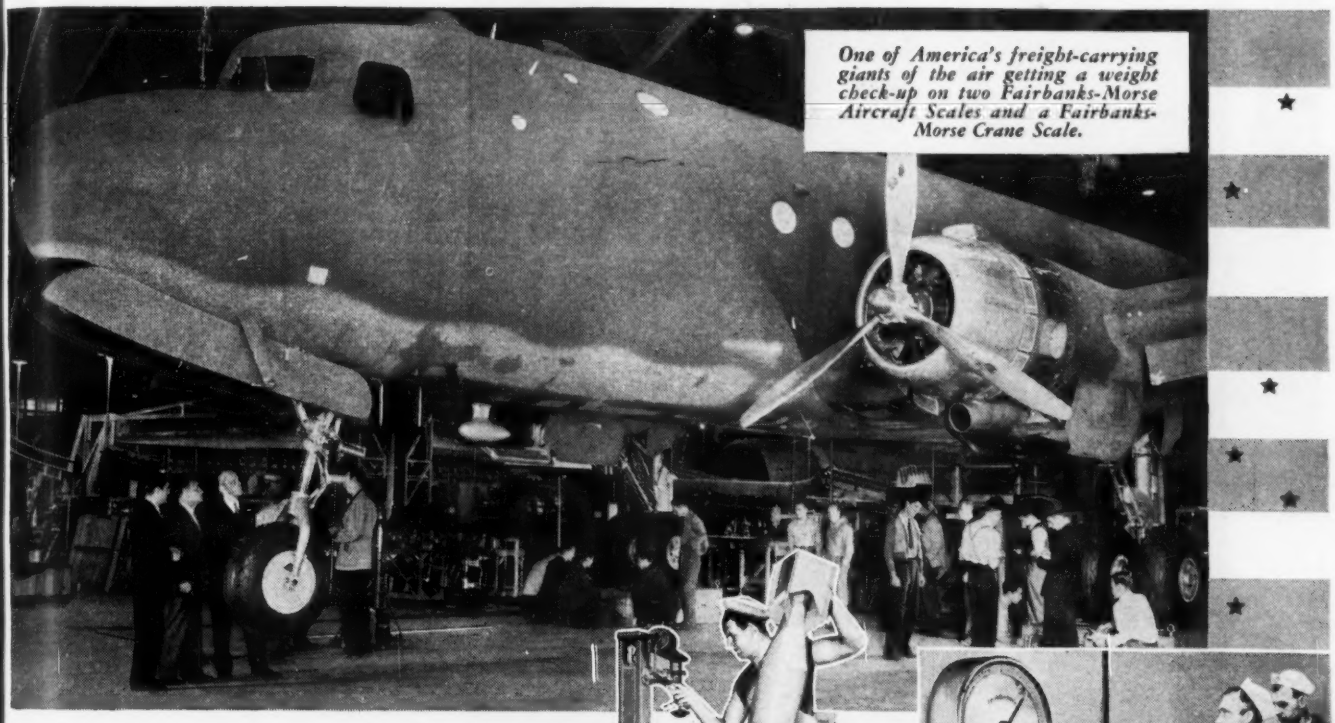
This was the most unusual complaint I had ever heard of from a textile mill, and the only thing I could suggest to the operative was for him to put some Flit in the oiling system.

I.O.C. (N.C.)

Reducing Absenteeism

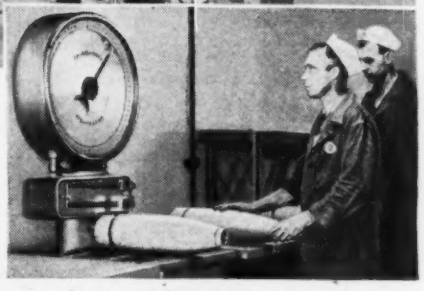
The "Old Man From the West" (August issue)—has two good reasons for absenteeism—too long hours and sickness. However, on his third reason, "freedom from fear and want," I think he has hit a foul ball, and is only partly right. I am sure the "Old Man" feels like fear and want have been partly or totally responsible for such success as he enjoys, and wants to saddle these two millstones on workers in general. His diagnosis doesn't take into account that men work hard, long hours and make sacrifices not for bread alone, but for such things as recognition of good work, patriotism, loyalty to good leadership, and the desire to be a member of a

Fairbanks-Morse Scales in Warwork



One of America's freight-carrying giants of the air getting a weight check-up on two Fairbanks-Morse Aircraft Scales and a Fairbanks-Morse Crane Scale.

Weighing an "egg" for the Axis.



Correct weight for accurate gunnery.

• WARWORK means *weigh-work* for Fairbanks-Morse Scales. They're weighing munitions . . . food . . . chemicals . . . tanks . . . aircraft . . . shells . . . just about everything, in fact. They are weighing at speeds which human hands can't match. They're weighing with accuracy that human eyes can't equal. They're working in endless shifts that human stamina can't endure. They're helping to speed up America's war effort on the production front, for Fairbanks-Morse Scales are "at home" on the production front, in peace or in war. Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago, Illinois.

★

Frozen eggs—NOT for the Axis!

★

Weighing charging materials at iron works furnace.

★

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Write FOR NEW 192 PAGE
DARNELL MANUAL

winning team. True, we all fear such things as a financial setback, loss of prestige, and public censure, but these are all negative thoughts, and cannot bring out the best in a man.

A good worker, if he realizes that financial security or independence are attainable, will work all the harder to reach that goal. A worker who hasn't lost the independent attitude that he is a free citizen when granted equal opportunity can do as well as any man. There is every reason to believe he will work regularly and hard to accomplish his ambition.

Management and their representatives, the foremen, must learn that calling attention to the bogie men of fear and want—as Hitler is now doing to his people to keep them fighting—is not going to beget loyalty and induce sacrifice any longer than necessary to meet the emergency. When times are better, and workers have a chance of other jobs this type of management will have a landslide of permanent absenteeism.

One of the freedoms tacked on to the other four is freedom of enterprise. This freedom means that every man can have the opportunity to decide his destiny, be it a skilled worker in a well-managed enterprise or the leader of an enterprise of his own, no matter how small. He can work in a going concern for good wages and for security or to make enough to save a little for the day when he can strike out on his own.

Management must realize that no tie binds a worker to an enterprise more securely than self interest. If a worker can expect good wages, and working conditions not so severe as to impair health, that is fine. However, he must also feel that the management is fair and wants to see him advance and attain a fair degree of security and prestige. Management must be competent, and prove that they are building men as well as products. They must nurture the sparks of ambition in all men, and show people their best interests are served by continuous, loyal, efficient service to the company. The chance to get a better job without outsiders stepping in, to own a home and a few acres, to educate their children, to be recognized for good work, to earn enough to save a little for a rainy day, to have healthful recreation and community activities, and to have a good place in which to live interests many.

The "fringe" of workers which do not respond to a management that offers to build men and women will be among the unemployed when labor is again plentiful.

M. G. (S. C.)

John P. Maguire & Company

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THE REFINITE CORPORATION

Write for free catalog, 107 Refinite Bldg., Omaha, Nebraska

Textiles in Rehabilitation

(*Continued from page 69*)

Naval Affairs Committee after a similar hearing, that is, in favor of the retention of the present law in its essentials. Government procurement agencies, including the Army and Navy are dead set against repeal.

TWO POINTS made by industry have not made discernible headway, namely that contracts be renegotiated after and not before the payment of taxes, and that allowable profits should include a reserve for postwar conversion costs and the capital required to make the change. Some committee members feel that the last contention has been answered partially in the action whereby the Federal Reserve Board and the procurement agencies have extended Government-guaranteed "V" loans to contractors who find themselves in need of cash following the cancellation of contracts. It appears almost certain at this writing the renegotiation law will be amended to raise the limit of contracts calling for renegotiation from the present $100,000 to $500,000.

Procurement officials of WPB have estimated that cancellation of war contracts would leave thousands of prime contractors and subcontractors with claims of $12,500,000 to $19,000,000 against the government. This gigantic volume of claims, the cost of conversion of industry to peace-time production, and the remembrance of the years it took to liquidate and adjust claims after World War I has led to a sympathetic and active interest in the problem. Congress seems indisposed to leave the matter to chance or to the discretion of the individual procurement agencies. The solution may well be based on a bill introduced by Senator Murray (D.) of Montana, Chairman of the Senate Small Business Committee. (It is agreed that small business would be particularly hard hit by deferment of claim payments). The Murray Bill provides that within 30 days of the filing of a claim, the Government would be obligated to pay 75% of it, with the stipulation that any over-payment would be returned to the Government with 6% interest. Such guarantee payments would give contractors cash needed for immediate postwar planning.

An inter-agency committee made up of representatives of WPB, OPA, Treasury, Smaller War Plants Corporation, Army and Navy is considering a uniform contract termination agreement. This agreement would be in the form of a clause that could be inserted in all contracts by reference. Actually what it would mean is that if

PLEXON

REG. U. S. PATENT OFFICE

THE NEW PLASTIC-COATED YARN FOR POST-WAR TEXTILE PROFITS

WHILE we continue to devote our energies and much of our production facilities to the manufacture of PLEXON Plastic-Coated Yarns for use in the war program, we are at the same time developing many new types of PLEXON Yarns to be used by the Textile Industry in the post-war markets to come. These new developments in PLEXON Yarns are the result of continuing research both in our laboratories and in our manufacturing plant—and they will duly present startling new opportunities for Textile Manufacturers.

The pre-war performances of PLEXON Yarns brought many outstanding advantages to the Textile Industry for the creation of new and different specialty fabrics. PLEXON Yarns—made in an almost unlimited variety of types, deniers, colors and finishes—woven, knitted or braided into unusual fabrics—found a ready and eager market for a wide variety of uses.

Here are a few Advantages and Characteristics of PLEXON Plastic-Coated YARNS

- **PLEXON Yarns have unusual tensile strength and flexibility.**
- **PLEXON Yarns will, in post-war production, be made in a still wider variety of deniers, types and sizes.**
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- **PLEXON Yarns normally are available in bright or matt finishes—opaque or translucent.**
- **PLEXON Yarns are resistant to water, mild acids and perspiration—won't crack or chip.**
- **PLEXON Yarns may be woven, knitted, braided, etc., on equipment now in common use.**
- **PLEXON Yarns for post-war markets will have many new characteristics worth careful investigation.**

Today—while most of us are devoting our facilities to the requirements of the war program—is the time to look ahead to profit-possibilities in coming post-war markets. Let us confer with you without obligation in regard to various new fabrics you can produce with PLEXON Yarns.

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Air Power to win the war

—OUR RESEARCH will give you
Air Superiority to win the peace

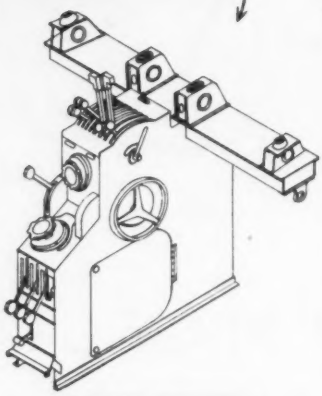
Post-war industrial air-conditioning must afford more comfort for labor, hold humidity and temperature *constant and uniform* for production.

For industrial air-conditioning equipment to be *practical* in meeting these expanded demands, *it must be efficient —it must be flexible.*

These are the ends toward which Bahnson research is working—to afford you *Air Superiority* in the peace.

The Bahnson Company has taken its place in the war effort by manufacturing material for the Air Corps and Army Ordnance.

Air-Conditioning Equipment is still available on priority ratings and Bahnson service men are available for any air-conditioning troubles.



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by Bahnson

—The Bahnson skill, engineering ability, organization, and precision manufacturing methods applied to solving air-conditioning problems have been largely devoted to the manufacture of war materials, such as the above control pedestal—nerve center of an Army plane.

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158 SUMMER STREET
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the war ended tomorrow, all contra tors would get the same treatmen Among the problems that are receivin attention are cash payments to hel convert industry, dismissal wages fo workers and disposition of surplus ma terials. This agreement clause woul apply to textile contracts as well a others.

On contract termination, Maj. Gen C. L. Corbin of the Quartermaste Corps, speaking recently before th convention of Southern Combed Yar Spinners Association, said that ne regulations covering future contract "amply protect a subcontracting in dustry such as yours."

Manual of Military Fabric

(*Continued from page 91*)

36x26 can be used to produce a satis factory fabric. Twist factors for variou plied yarns are determined from th table which follows:

	Warp	*Filling*
2 or 3 ply	5	3.5
4 ply	4.5	3
5 or 6 ply	4	2.5
7 ply and up	3.5	2

These factors can be varied if bette results are obtained, as the amount o twist is not specified.

If yarn is purchased, it is highly de sirable to specify large packages wit a minimum of knots. It may be advan tageous to purchase twisted yarn o warp beams.

Opening, blending, picking, carding and drawing organizations designate No. 7 in every case are the same fo the warp and filling. Single roving o long draft spinning was used for bot warp and filling. Roving Organizatio No. 10 for 0.82 hank roving and Spin ning Organization No. 13 for 7s ar employed for both warp and filling Heavy ducks are generally beame from a direct creel beamer. A goo firm warp is necessary for satisfactor weaving. A section beamer might b used, the work being handled just a if it were on the way to the slasher From the warp beam the ends ar transferred by means of the sectio beamer to the loom beam. Since n size is used, the slasher has no part i the manufacture of this item; how ever, it is possible to use the slasher a a beamer by running it without siz and heat.

Fabric Manufacture: To insure goo selvages it is necessary to get a firm warp when it is wound on the beam Cops and bobbins should be so woun as not to slough off.

Although a regular duck loom, suc as the C & K D-1 or D-2, is well suite for weaving this numbered duck, othe looms can be employed, for instanc the XU Model Draper loom. Carpe

you can protect exterior

masonry surfaces

with non-critical materials

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The A. C. Horn Company announces WATERFOIL, a scientific contribution to masonry protection. Ten years of development are back of this product, including application on many structures under varying climatic conditions. WATERFOIL is now available for general use.

No priorities are needed for WATERFOIL. It is manufactured of non-critical materials . . . irreversible inorganic gels. WATERFOIL is not a paint . . . it contains no linseed oil . . . no resin emulsion . . . casein or cement. It hardens into a heavy coating of microscopic "spongelike" character. Water vapor finds exit; but actual water penetration is impeded, thus helping to prevent reinforcing bar rust and concrete spalling.

WATERFOIL becomes an integral "welded" part of the masonry surface to which it can be applied by any careful workman. No primers are used. If your masonry structures, brick, concrete or stucco, need decorative restoration and protection, get the details on WATERFOIL. Backed by a nation wide company with 47 years of experience. Write today for literature.

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upholstery, and pile fabric looms have been converted to duck.

In weaving duck, proper loom settings are important. The characteristic hand or pebble of duck is controlled by raising or lowering the whip roll. On heavy ducks drag rolls are necessary. Humidification of the weave room is essential in the South and is advantageous in all parts of the country. Looms should not be overloaded as they will wear out quickly.

In a duck loom there are three important steps which make the weaving of duck possible: (1) the let-off; (2) the harness motion; and (3) the take-up. The accompanying diagram and table indicate arrangements of these mechanisms for the C & K duck looms. Two forms of letoffs are in general use. In lighter looms the warp passes around a series of rollers while in heavier looms the arrangement consists of an I-beam in combination with other elements.

The line of the warp for successful weaving of duck should be such that the point of departure from the back roll *D* or *G* is above the cloth level at the back of the loom. The amount by which it is raised varies within a range of 2 to 6 in. The harness is operated by cams which because of the warp tension should be substantially made. Cams should be designed to hold the shed open for approximately 180 crankshaft degrees; in other words, one-half a pick. The throw of the cam depends upon the size of the shuttle and the sweep of the reed in the loom to which the harness motion is applied.

The harness should be made to cross when the shed is approximately 2 in. from front center with the lay coming forward. This enables the loom to beat the filling up when the harness is opening for the next pick thus locking the filling in place.

The take-up normally consists of two rolls. The cloth passes over the breast beam and around the take-up rolls. The first roll ordinarily is covered with card clothing. The type used is 2-ply $\frac{7}{8}$ in. thick with diamond points. From the first take-up roll the fabric passes around a second take-up roll. This covering varies and can be crepe on gridded rubber or other covering. In some instances this last roll is not covered at all.

The take-up is driven by a ratchet and pawl and is preferable to a worm take up for duck looms. It is set to operate when lay is beating up.

In addition to these main items other changes are advisable. For instance, a filling stop motion and warp motion are of great help in weaving duck. Temples are not needed for the heavy ducks.

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AUTHORITIES AGREE that dry air in plants and offices cuts working efficiency to a suprising degree, encourages winter colds, and favors dust and static. Now you can eliminate this source of absenteeism and lowered efficiency simply, quickly and economically by installing Armstrong HUMIDIFICATION. Also prevents fiber breakage, and other evils of dry air.

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Uncle Sam is getting all of our production efforts for the duration of the War.

But our research and development work is still going ahead and you will profit by its results in greatly improved machines for yarn throwing, as soon as peace returns.

U. S. ACME TWISTERS FOR SPOOL OR HEADLESS PACKAGE

U. S. JUMBO FACE DRIVE TWISTERS FOR LARGE HEADLESS PACKAGE WORK

U. S. ACME DOUBLER TWISTERS—LARGE PACKAGE

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U.S. TEXTILE MACHINE CO

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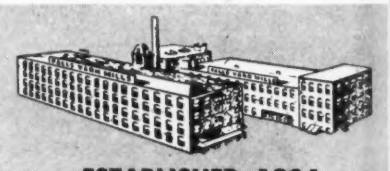

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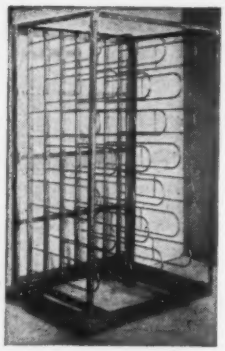

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Trucks made to order to fit your own ovens in capacities from 75 to 98 cakes. Polished brass arms hold and protect the yarn cakes. Strong easy rolling casters assure free movement of truck from oven to machines. What are your needs—Let us serve you.

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Air Express in War-Time

Textile industry avoids production delays by speed in getting samples, parts, dyes, etc.

A PEACETIME USER of air express to speed sample materials and spare parts to customers and to mills, the textile industry is finding even greater use for air cargo service in fulfilling its wartime contracts, reports the air express division of Railway Express Agency, which handles air express cargo for the nation's domestic and international airlines.

Several New England manufacturers, when they receive an order for a certain shade of material from the Army Quartermaster Department, match the color and then shoot the samples to the QM by air express. The samples are checked, corrections made if needed, and the swatches flown back to the mills.

In the southern textile region, mills utilized the speed of air express several years before Pearl Harbor. Shipments of sample material weighing from 3 to 5 lbs were the rule. Recently, however, war-order samples have boosted the average weight of these shipments to 8 to 10 lb. Total volume of shipments is running 70% over a year ago; last April gross revenue to the Agency exceeded $1,000,000 for the first month since the service started in 1927.

Shipments of replacement parts for machines and emergency shipments of dyes and chemical compounds, have been regular air express consignments for several years; weight varies from 1 to 90 lb. each.

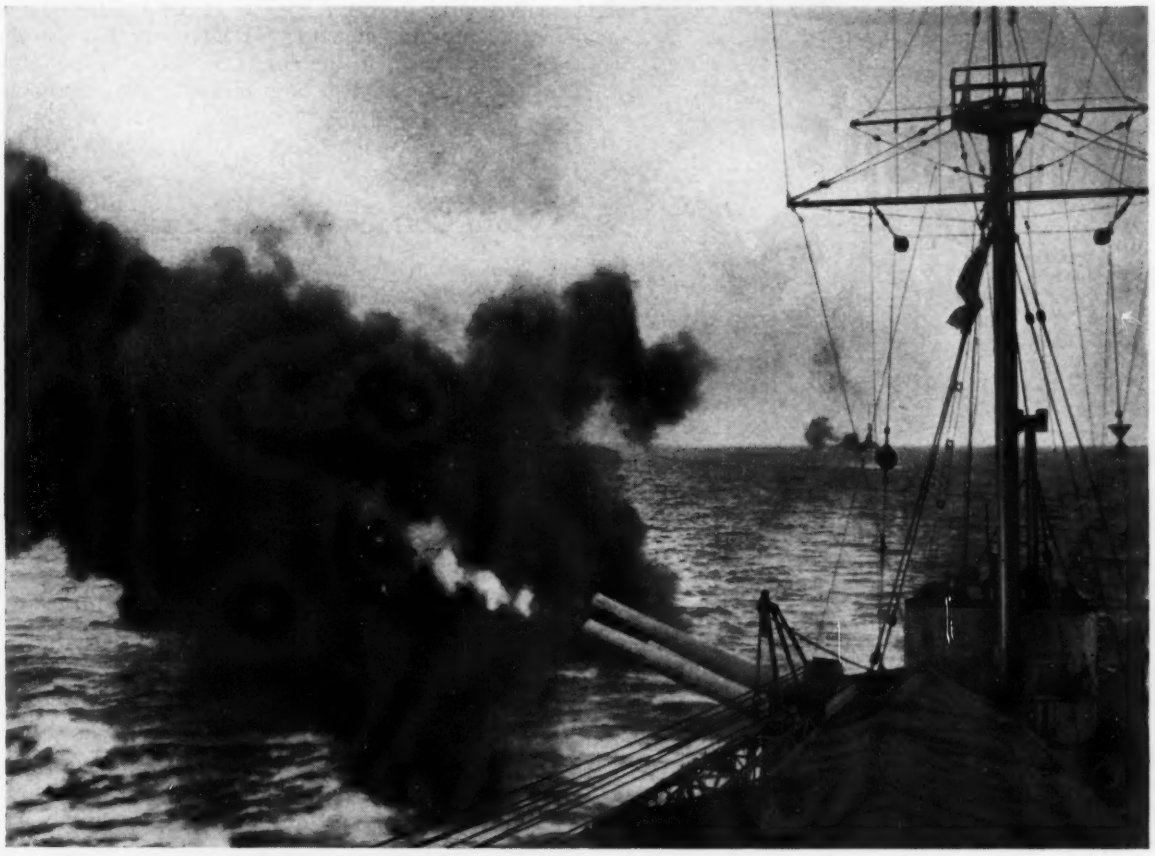
Indicative of how the 3-mile-a-mi ute speed of air express aided in o textile emergency is the case of Charlotte, N. C., plant which fou itself in urgent need of a sizing co pound. Within four hours the co pound, air-expressed from Atlanta, h been received at Charlotte and was use. The mill's operations had n been interrupted for a minute!

Again, a Rossville, Ga., plant w threatened with a shutdown due machine breakdown. The mill wir an eastern manufacturer to fly a vital needed machine part by air expre The part was received overnight a installed in sufficient time to avo disruption of operations.

Through coordinated air and r express service, mills not located airport cities are enabled to secu the benefits of combined air and r express speed in transit. Supplemen ing the 350 airport cities throughe the United States, are the 23,0 offices of Railway Express Agenc Schedules of both air and rail expre service are coordinated so as to effe the transfer of air express to rail ser ice, or vice versa, with maximum ef ciency. It is estimated that about 30 of all air express either starts or fi ishes its trip in rail service, or mov part way by rail.

Loading Railway Express Agency cargo on plane

NOW — ALL OUT TO WIN!



THEN —

The great change-over will come and machinery which has been engaged on war production will need re-conditioning and replacements to meet the urgent demands for textiles.

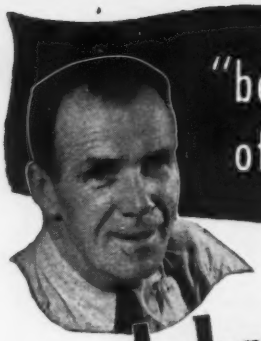
Clothes will be worn out and new outfits needed.

For such an event we are already planning. Whether you produce Worsted Yarns on the English or Continental Systems our services are designed to meet your needs and put your plant in perfect order.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS

KEIGHLEY (Yorkshire) **ENGLAND**



"better impregnation of fibres!"

Johnson's

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the water repellent made by the makers of Johnson's Wax

Why better impregnation from Johnson's DRAX? The answer lies in a special method developed by S. C. Johnson & Son which makes the colloidal particles of DRAX extremely uniform in size. The result is better impregnation of fibres . . . and uniform, even distribution on the entire run of cloth.

Have you tried DRAX? Here are other features found in this water repellent:

DRAX is noteworthy for its ease and economy of application

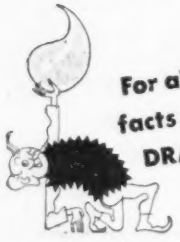
DRAX may be diluted with ordinary tap water

DRAX helps improve hand

DRAX has an excellent "money value"

Further, to help you meet the mildew problem, we have developed DRAX 1860PMA. This special formula contains sufficient quantity of phenyl mercuric acetate to provide a mildew-proofing which meets the microbiological test for *chaetomium globosum.* DRAX 1860PMA DOES NOT LEACH OUT READILY.

☆ *BUY U. S. WAR BONDS AND STAMPS* ☆



For all the facts about DRAX, write...

S. C. Johnson & Son, Inc.

Industrial Wax Division

Dept. TW-103, Racine, Wisconsin

NEWS OF THE MONTH (*Continued from page 122*)

Research Institute Meets Nov. 18

The annual meeting of the Textile Research Institute, Inc., will be held on Thursday, Nov. 18, at Hotel Roosevelt, New York. Dr. Hugh S. Taylor of Princeton University will be the guest speaker at the luncheon. Beside the usual morning meetings of members and directors, important research meetings, subjects to be announced later, will be held in both morning and afternoon.

▼ ▼ ▼

More Cottons Wanted by Army

Invitations to bid on 110,000,000 sq. yds. of herringbone twill cloth have just been issued by the Philadelphia Quartermaster Depot. This fabric, covered by Army Specification 6-261 was described in the Manual of Military Fabrics, Part V, appearing in the June 1943 issue of TEXTILE WORLD, in which complete manufacturing details were given.

The Depot also contemplates the purchase by direct negotiation of 9 oz., 8.2 oz. and 6 oz. cotton uniform fabrics. Wool goods cut-backs may be rescinded.

▼ ▼ ▼

Durene Launches Quality Control

A three-point program has been adopted by the Durene Association to insure quality from yarn to finished goods. In addition to the quality standards by which the yarn is produced, "appearance" standards have been developed. The trade-mark "Durene" will be licensed for use only on merchandise of good quality and workmanship which can meet performance tests of a qualified testing laboratory. Cooperation with retailers to assist them in educating sales personnel is an important phase of the program.

Effective Dec. 31, existing license agreements granting permission to use the trade-mark "Durene" as identification of yarn content will be cancelled. New license agreements incorporating quality-control standards are now ready for issuance. The plan will be a foundation stone in post-war markets. However, despite war-demand curtailments, the identification in the first six months of 1943 was within 10% of 1941, the peak year.

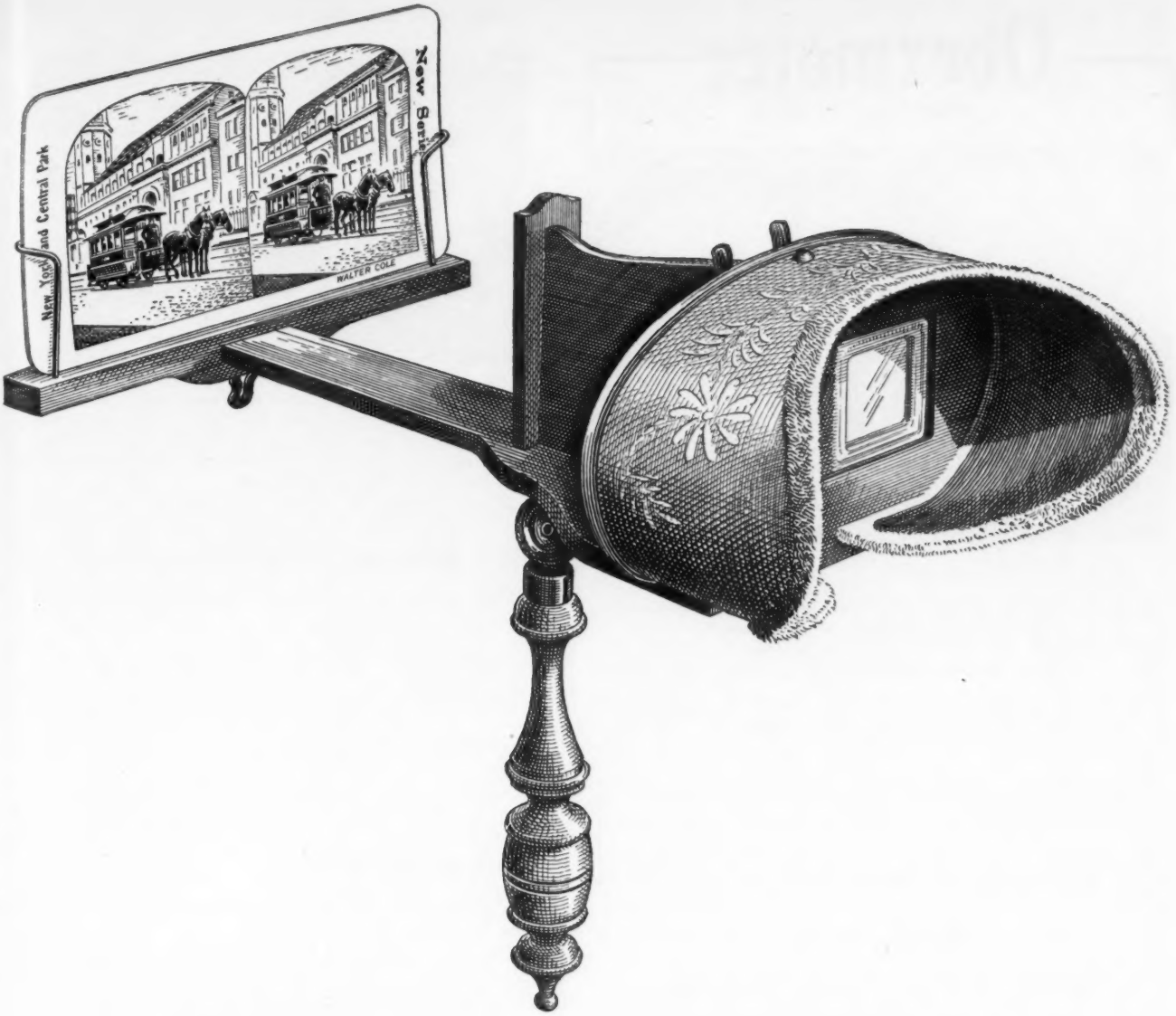
▼ ▼ ▼

Industrial Fiber Society Holds Second Meeting

The second meeting of the Industrial Fiber Society and Textile Physicists was held in Charlotte, N. C. on Sept. 17 and 18. It was agreed among those present that the meetings be continued and that an organization be set up to handle the affairs of the society. J. P. Elting, director of research for Kendall Mills, was elected president for the coming year. Mr. Elting appointed the following committee to assist him with the activities of the group:

M. E. Campbell, N. C. State Textile School; G. A. Rosselot, Georgia School of Technology, Atlanta, Ga.; Carl M. Conrad, Southern Regional Research Laboratory; Sherman L. Gerhard, Textile Division, U. S. Rubber Co.; John T. Wigington, Cotton-Textile Institute; W. R. Marsden, Bibb Mfg. Co.

The next meeting will be held at Clemson College probably in April, 1944.



THIS? A WAR WEAPON?

Remember the old-fashioned stereoscope — grandfather's substitute for the movies? Remember how it made pictures stand out in three-dimensional relief?

Well, the same idea is being used in stereoscopic airplane cameras today. Because stereoscopic pictures show up hidden depressions and hills that are not always apparent in the usual aerial photograph.

Grinding stereoscopic lenses, in fact, *all* highly-corrected lenses, is a delicate precision operation. In order to insure accurate measurements and to avoid uncontrolled expansion, lenses are tested in special *air conditioned* rooms . . . maintaining a constant temperature at all times.

Air conditioning is used similarly in making the famous Norden bombsight, in precision machining, and in many other industrial processes.

To do exacting war jobs like these, General Electric engineers have developed dependable air conditioning and industrial refrigeration equipment—equipment that had to be more efficient, more compact, and more flexible.

In the post-war period, the public will be enabled to buy not only new—but vastly improved air conditioning—from General Electric.

☆ BUY WAR BONDS ☆

General Electric Co., Air Conditioning and Commercial Refrigeration Divisions, Section 4310, Bloomfield, New Jersey.

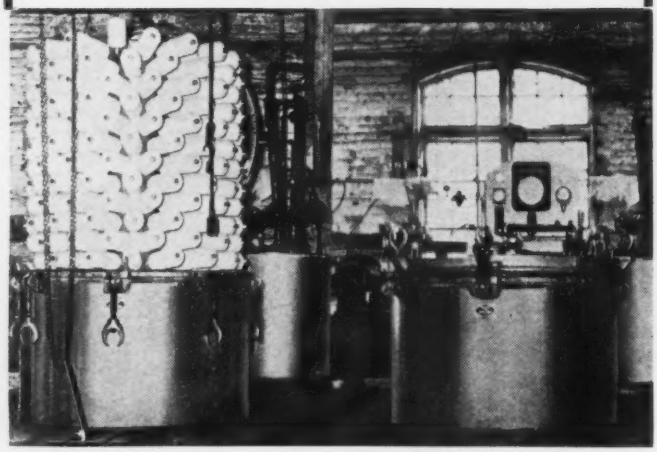
Air Conditioning by

GENERAL ELECTRIC

Hear the General Electric Radio Programs: "THE HOUR OF CHARM," Sunday 10 P. M. EWT, NBC..."THE WORLD TODAY" News Every Weekday 6:45 P. M., EWT, CBS

Obermaier

REG. U. S. PAT. OFFICE



Model KRAG 407 Twin Package Spindles, Machine with Carrier.

The spindles on the model KRAG are placed horizontally on carrier, which makes for easy loading and unloading.

Two packages are loaded on one spindle, so that any desired flow of dye liquor can be obtained by the use of larger capacity pumps.

This model is ideal for the dyeing of tubes of cones as the outer circumference of the loaded cones increases in direct proportion to the larger bottom diameter of the tapered form of the cones.

The special feature of this machine is the built-in indirect heating cylinder which makes for even temperatures throughout the entire bath and consequent level dyeings of any shades sensitive to heat.

At the same time, it reduces the liquor ratio to a minimum thereby producing most economical dyeings, especially with vat colours.

Builders of

Cotton & Wool Dyeing Machines

for

Beams • Packages • Rawstock • Skeins

•

Centrifugal Extractors and Driers

•

Centrifugal Pumps

•

Rayon Cake Dyeing Machines

•

Dye Spindles and Perforated Tubes

Stainless Steel Construction

★

All Subject to Required Priorities

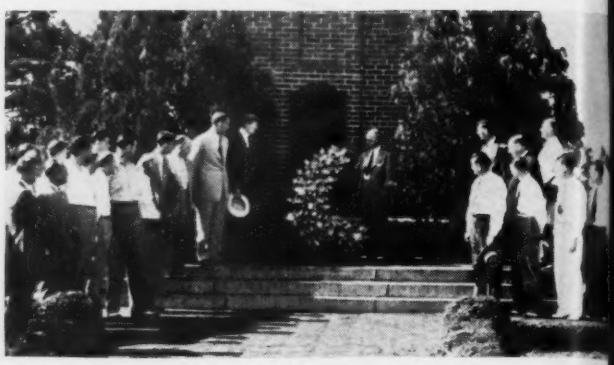
★

Standard Fabricators

INCORPORATED

355 WALTON AVENUE • NEW YORK, N. Y.

Replacement Parts For Existing Machines Can Be Furnished



G. T. WILLIAMSON, veteran employee of Callaway Mills, who suggested a memorial to the late Fuller E. Callaway, founder of the company, places flowers at the base of the memorial tower at a service sponsored by the Callaway Mills Overseers' Club on Mr. Callaway's birthday anniversary.

60th Anniversary for Overseers

The sixtieth anniversary of the National Association of Woolen and Worsted Overseers will be celebrated in conjunction with the annual meeting of that body at the Hotel Manger, Boston, beginning on the evening of Nov. 12 and continuing with sessions and annual banquet on Nov. 13. Thomas M. Dorgan is chairman of the committee which has the detailed program for this meeting in hand.

▼ ▼ ▼

Rulings by WPB

Among the WPB rulings of the last few weeks are the following:

WPB has made available a quantity of cotton duck for civilian use. Order M-91 has been amended to release army duck, woven awning, stripe duck, shoe duck, single-yarn filter duck and twill, single and double filling duck, and ounce duck from restrictions limiting their sale to the Armed Services and for certain industrial uses.

A quantity of all-viscose-rayon, three-leaf twill lining, olive drab, first quality and in pieces of full length is being made available for sale to manufacturers of women's, children's men's and boys' coats and suits, the Textile Division of WPB announced. The cloth belonged to a Government agency.

WPB recently announced that crib sheetings and baby pants made from fabrics coated with vinyl resins cannot be made in larger quantities now because vinyl resins are essential for a variety of military uses.

▼ ▼ ▼

OPA Enactments

Among the recent enactments of OPA are the following of textile interest:

Cut and sewn Nylon hosiery has been given an increased ceiling price by OPA. Amendment No. 3 to MPR 95, effective Aug. 27, 1943.

A nine-man carded sales yarn producers' Industry Advisory Committee has been appointed by OPA to consult with it on problems involved in stabilization of wartime yarn prices.

Sellers and commission dyers of cotton yarns have been reminded by OPA that prices for these yarns and rates for commission dyeing are covered by GMPR which,

TEXTILE BANKING COMPANY

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

Textiles have become weather conscious

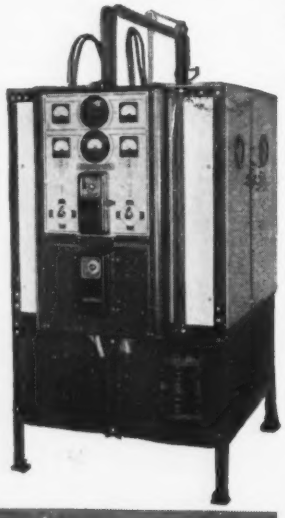
Mill operators know what the ATLAS FADE-OMETER and LAUNDER-OMETER have done for the industry in predetermining the fastness to light and washing of textiles.

ATLAS TWIN-ARC WEATHER-OMETER

for years the standby of the paint and roofing industry, now has been redesigned to accommodate large size textile specimens in order to meet the new federal specifications demanding accelerated tests.

Atlas Twin-Arc Weather-Ometers alone have—

1. Temperature control.
2. Unlimited range and control of Light and Water Spray Periods.
3. Adjustable and automatic timing.
4. Insulated test chamber.
5. Operates continuously 24 hours without manual attention.
6. Carbons 28c per day.
7. Full automatic—Safe to operate unattended overnight.
8. Control panel contains all the essential meters and automatic timers required to perform the functions of the machine.



• Originators and sole manufacturers of accelerated testing devices for a quarter of a century. Fade-Ometer, Weather-Ometer, Launder-Ometer are the accepted standard accelerated testing machines all over the world.

ATLAS ELECTRIC DEVICES CO.
361 W. Superior St.,
Chicago 10, Illinois

ATLAS-OMETERS
WEATHER-OMETER
LAUNDER-OMETER ★ FADE-OMETER

in substance, sets ceilings at the prices at which deliveries were made in March, 1942.

The paragraph containing a requirement calling for periodic reports by the war procurement agency or the seller to the war procurement agency on sales of certain cotton products exempt from price control under specified circumstances when sold to war procurement agencies, has been revoked from the maximum price regulation for cotton products.

Persons who buy new cotton, linen and underwear cuttings from a branch of the Armed Forces for shipment directly to a consuming mill may not charge brokerage upon such cuttings, OPA announced.

Sellers of rayon yarn and staple fiber do not need to grant discounts from ceiling price when sales are made on a net cash basis to customers purchasing 10,000 lb. or less per month. (Am. 5 to MPR 167, Sept. 10.)

Price ceilings for cotton linters produced after Aug. 1, 1943 have been adjusted by OPA so that farmers will receive the same average return as they obtained on their 1942 crop. The change applies to chemical linters and hull fibers allocated by the WPB to the chemical industry as well as the "free" or unallocated grades. (Am. No. 1 to Revised MPR No. 191.)

Amendment of 250 price regulations to show conformity with the Taft Amendment to the Emergency Price Control Act of 1942 relating to use of standards in fixing prices has been announced by OPA. There are now 444 price regulations in effect. The Taft Amendment permits ceiling prices to be fixed by reference to standards or specifications already in general use in the trade or required by other Government agencies, but prohibits further "standardization" of any commodity by OPA unless the Administration finds that there is no practicable alternative for securing effective price control.

▼ ▼ ▼

This and That

A new method of vat dyeing washable rayon fabrics has been developed by North Carolina Fabrics Corp. in cooperation with the technicians of American Viscose Corp. Known as the Vatru-Set process, the new method is said to make possible the vat dyeing of fabrics which hitherto could not be vat dyed.

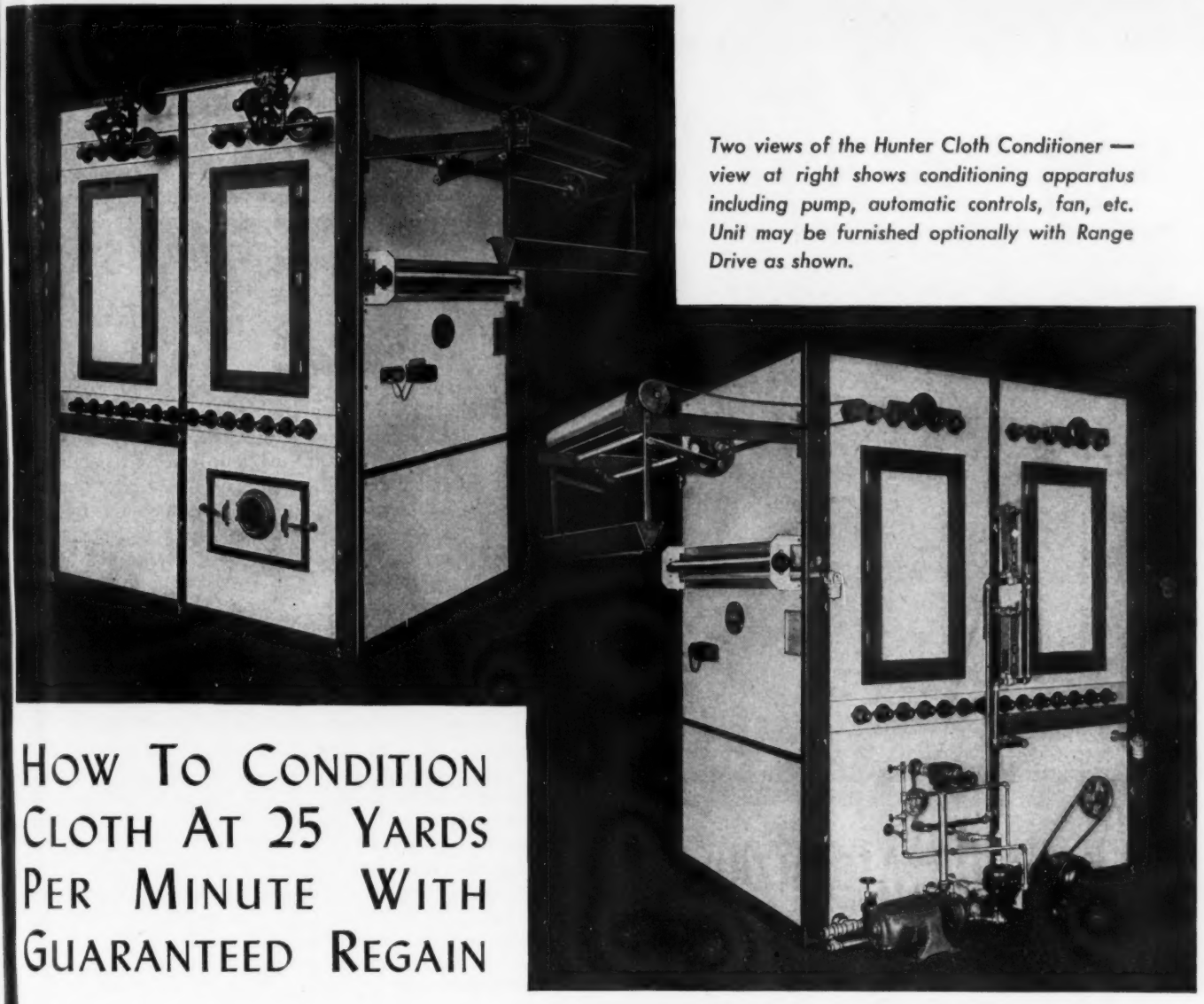
Use of tapioca as a warp-sizing agent, except for synthetic fibers, combed cotton yarns 40s and finer, and cordage fibers is prohibited in a recent amendment to Conservation Order M-333. The order also prohibits use of tapioca as a finishing agent except when Army or Navy specifications call for its use as such.

Representatives of textile and civic groups in Philadelphia are seeking to have the city council appropriate $75,000 for the Philadelphia Textile Institute.

McCallum & Robinson, Inc., Memphis Tenn., operators of the world's largest cotton pickery, and manufacturers of mops and mop materials, observed their 50th anniversary on Sept. 1.

Textile Export Association of the United States has approved a red, white and blue label containing a sketch of the Statue of Liberty and bearing the caption, "Imported from the United States," to be used to identify all shipments of American textiles, both large and small, to markets overseas.

Equipment for making synthetic fibers from soy beans has been purchased from Ford Motor Co. by Drackett Co., Cincinnati, Ohio, according to a recent announcement. Robert A. Boyer, who was in charge of the development work on the fiber for Ford, is now associated with the Drackett Co.



Two views of the Hunter Cloth Conditioner — view at right shows conditioning apparatus including pump, automatic controls, fan, etc. Unit may be furnished optionally with Range Drive as shown.

How To Condition Cloth At 25 Yards Per Minute With Guaranteed Regain

THE Hunter Cloth Conditioning Machine pictured on this page is the newest Hunter contribution to better finishing.

It is a machine affording a new principle of restoring natural moisture content to cloth after finishing. It is setting new records for evenness, uniformity, flexibility and production. It demonstrates that the addition of moisture content improves quality by evening shades, and provides a natural soft handle. It brings the cloth up to its proper weight and proper balance between moisture and fabric.

The unit includes an enclosure through which the cloth passes in vertical runs. It has an integral air conditioning unit supplying conditioned air to the enclosure for treating the cloth.

The Hunter Conditioner can be built with a capacity to fit any individual need, although the units pictured are large enough for 95% of the woolen and worsted mills.

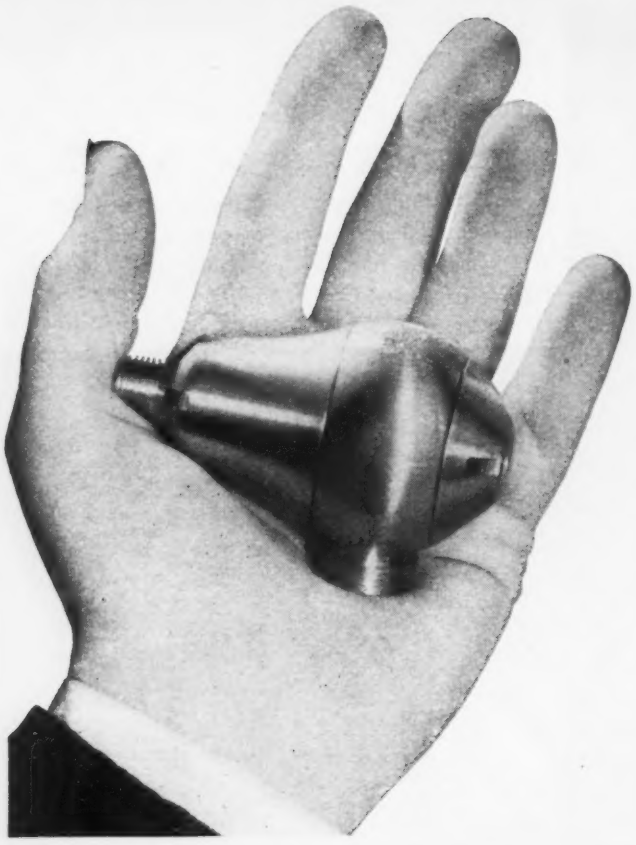
The productive speeds are anywhere from 15 to 25 yards per minute, with a guaranteed regain of 10% on the bone dry basis.

The Hunter Conditioner is so constructed that there is absolutely no free moisture within the enclosure. Only saturated air is blown over both the back and face of the cloth. The conditioned air is automatically controlled, both as to temperature and humidity, by certified instruments. The Conditioner is provided with means for warming the inside of the enclosure before the Conditioner is started, thus eliminating any risk of condensation.

The Conditioner is not only a valuable adjunct for improving the finish, handle and shade, but also is invaluable in assisting mills to bring underweight fabrics up to required weights. These machines have proven themselves in operation on such a wide range of fabrics as worsteds, rayon and wool blends, blankets, O. D. Marine and Naval cloths.

FOR COMPLETE DETAILS, SIMPLY WRITE

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS
FOUNDED 1847



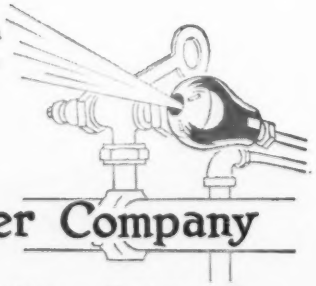
A Reliable Atomizer

Leaky atomizers are *not* reliable. They fritter away your expensive compressed air—on the sly. They leak in places not easily found; places you are not looking for.

Parks Turbomatic Atomizer

"leaks" *in one place*; where vapor is made and pushed out. Air pumped in comes out where it is supposed to. The TURBOMATIC (the atomizer with the diaphragm) is efficient . . . . Stays so.

Interchangeable with earlier Turbo models.



Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

Textile Scarcities Continue in All Markets

Cotton goods distributors who hoped for an easier situation in civilian goods have been disappointed by the Government's recent rescinding of its plan to slacken military purchases. Substitution of coarser print-cloths for the finer goods still goes on, but there is no evident surplus even in the coarser lines. Staples, like bed sheets and towels, are being moved virtually on an allotment basis. Colored yarn goods are scarce. Efforts are being made to turn out enough styled cotton goods to maintain the market which skillful designing and promotion have built up over a period of years.

Wool manufacturers have been allotting production for the first quarter. Most buyers have taken what was offered eagerly, but a few are reported to have been choosey on styles and to have turned down some materials which they said they didn't want. They expressed belief that they could get more of what they did want later on. The industry is hampered by manpower shortage and by some lack of selection in the raw material. Blankets made in Peru are being offered by a New York retailer at prices in the upper price brackets of the domestic production. New competition in women's clothing is on the horizon as men's clothing chains put in lines of women's tailored woolen and worsted garments.

Rayon products are on their way to be much scarcer than had been thought likely even a few months ago. Government is calling for more rayon for tire-cord and a scarcity is reported even with full use of all existing facilities. New equipment for twisting rayon tire-cord is being installed by leading manufacturers under high priority ratings granted by WPB. Further conversion of rayon plants to high-tenacity is under way. Scarcity of wood pulp is forecast as some of the larger pulp plants in the Northwest curtail or shutdown due to lack of manpower and logs. With linters already restricted, raw material situation will be keen in the next few months. The answer to this is not clear except that for military rayons the Government will assure raw material taken from less essential uses. However, this makes scarcity of civilian rayon all the more inevitable.

Hosiery makers continue to find ready market for all the civilian goods they can turn out. Full-fashioned stockings have sold well for the expected holiday trade. Despite consumer criticism, rayon goods move well and manufacturers believe they are improving in quality all the time. Half-hose mills have taken civilian business to fill the gap left by cancellation of a portion of their Government contracts.

Underwear sellers continue to stress the shortages in civilian goods which may mean actual privation in some quarters this winter. Infants' and children's goods are running 20% below normal due to manpower and material shortages, and heavy weights for men and women cannot hope to catch up with expected usage.

Outerwear scarcities are coming into evidence as the armed forces make greater use of knitted items such as sweaters, helmets, gloves, mufflers, etc. This demand is tieing up yarn sources and opportunity to increase civilian production for this season is not in the cards.

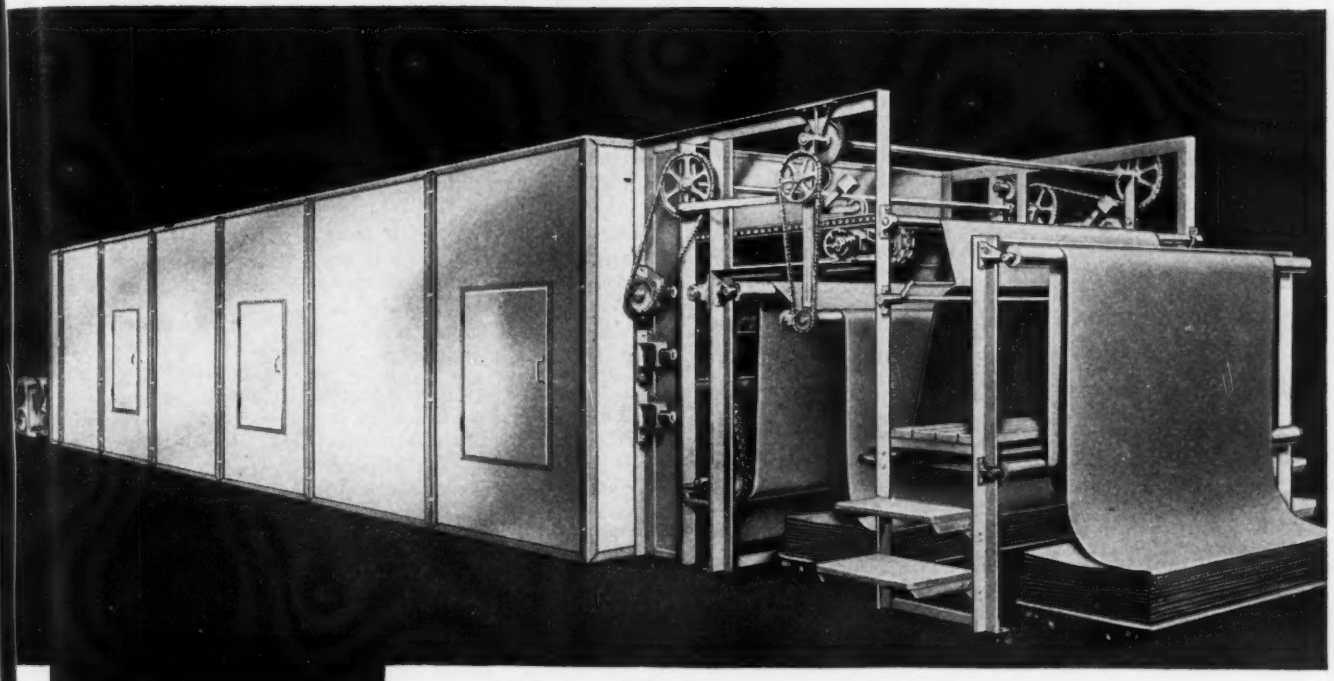
TEXTILE CALENDAR

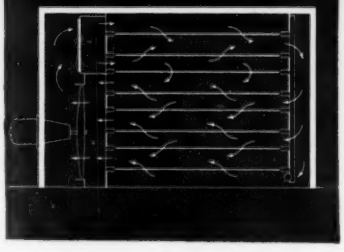
Cotton-Textile Institute, annual meeting, Waldorf-Astoria, New York, Oct. 20 and 21, 1943.

Committee D-13, American Society for Testing Materials, fall meeting, Park Central Hotel, New York, Oct. 20 and 22.

Exposition of Chemical Industries, Madison Square Garden, New York, Dec. 6 to 11, 1943.

Faster...Better DRYING
with the
NEW PROCTOR *High Speed* TENTER DRYER





Air circulation in the new Proctor High Speed Tenter Dryer is illustrated by the cross-section above. The arrows indicate how air is forced through the cloth rather than blown across the surface. The machine is so designed, however, that any portion of the circulating air can be blown over, through or across the goods depending upon the character of the cloth being dried. The degree of relative humidity within the dryer is maintained at the most economical and favorable point, by correct proportioning of moisture-laden air discharged and fresh air taken in.

This new High Speed Multiple Run Tenter Dryer is specifically designed for faster and better drying of woolen and worsted cloth, pile fabrics, felt, blanket cloth and other fabrics which must be held to width during the drying operation.

This advanced model tenter dryer has greatly reduced operating costs and increased capacities very materially. In many cases capacities are greater than those obtained from ordinary tenters now in use.

Drying is accomplished by penetration of warm air through the cloth, rather than having the air blown across the surface of the cloth. In this way every fiber comes in contact with live, heated air, and rapid evaporation throughout the entire thickness of the fabric keeps temperatures down, prevents surface baking, permits high initial temperatures without the danger of high cloth temperatures and, consequently, speeds production and improves quality.

The simplicity of design of this machine makes it easy and economical to operate. Its all around ruggedness of construction keeps maintenance costs at a minimum. Panels and doors which enclose the framework are of a new patented construction, exclusive with Proctor design. In the housing design heat losses are effectively prevented with Proctor Super insulation. Unit construction permits building a machine individually suited to the needs of any given plant or the addition of units when necessary.

PROCTOR *High Speed* TENTER DRYERS
Manufactured by
PROCTOR & SCHWARTZ · Inc · PHILADELPHIA

BURKART-SCHIER DEVELOPS SOAP EXTENDER

Burk-Schier PWT Speeds Scouring and Dyeing —Saves Time and Money—Available in Quantity

Of timely interest to the textile industry is the development of a soap extender by Burkart-Schier Chemical Company of Chattanooga, Tennessee. The cost of this new product—Burk-Schier PWT —is less than that of soap, yet may be substituted pound for pound for a considerable percentage of soap customarily used. Woolen and Worsted mills report that superior results are obtainable with PWT at an actual savings by replacing 3 ounces of soap in the fulling and scouring formula with 3 ounces of Burk-Schier PWT, retaining the usual amount of Soda Ash. The soap stock has added detergency and is kept fluid. The problem of starting up with gelled or solid soap stock is eliminated.

With the above formula wetting is faster and dirt, soil and grease are readily removed and held in suspension for quick rinsing.

For scouring rayons and cottons PWT may be applied successfully to yarns, hosiery and piece goods. Burk-Schier PWT and mild alkali insure clean, well bottomed goods—ready for bleaching or for dyeing. PWT has excellent wetting properties, and when used in the dye bath in place of soap, insures even penetration of dyestuff and clear bright colors in a minimum of time.

Burk-Schier PWT is a versatile auxiliary and of special interest now in view of the shortage of soaps and other wet processing agents. PWT is available in quantity and immediate deliveries can be made. Samples and further data upon request. A Burk-Schier Mill Tested and Approved Product.

BURK-SCHIER

BURKART-SCHIER CHEMICAL CO.

Manufacturing Chemists for the Textile Industry

CHATTANOOGA, TENNESSEE

PENETRANTS • DETERGENTS • SOFTENERS • REPELLENTS • FINISHES

NEWS ABOUT MEN

Olin D. Gay, president of Gay Bros., Cavendish, Vt., has been appointed chairman of the economic development committee in Vermont.

Scott Russell, president of Bibb Mfg Co., Macon, Ga., has been appointed counsel to the United States Senate Post-War Planning Committee. He is resigning from Bibb as of Nov. 1. Mr. Russell has been a practicing attorney for many years and is a familiar figure in Washington. Senator Walter F. George, of Georgia, is chairman of the committee.

Frank L. Nagle, chairman of the board of Bragdon, Lord & Nagle Division of the McGraw-Hill Publishing Co., marked the 63rd anniversary of his joining the *Textile Record* of Philadelphia on Sept. 20. That paper is one of TEXTILE WORLD's predecessors. Capt. Nagle is actively engaged on the sales staff of this paper with headquarters in Boston.

George H. Dunlap, former associate director of research with Cotton-Textile Institute, has joined the faculty of the textile school of North Carolina State College, Raleigh, N. C.

Dr. Van L. Bohnson, a leading figure in the development of acetate rayon production in this country, retired on Oct. 1 as director of acetate research, for E. I. du Pont de Nemours & Co., Wilmington, Del., because of his health. He is succeeded by **Dr. Fenton H. Swezey,** who has been assistant director of acetate research since Jan. 1, 1942. **Dr. G. S. Hooper** now becomes assistant director.

Norman G. Becker, chief of the Knit Goods Pricing Unit, OPA, has resigned and will return to private business, conducting a brokerage business in yarns and knit goods in New York.

J. M. Jones, has succeeded **F. R. Marshall** as secretary of the National Wool Growers Association, Salt Lake City, Utah. Mr. Marshall had been secretary for many years and Mr. Jones was previous assistant secretary.

Alfred R. Headen, of Hickory, N. C., owner and operator of Headen Hosiery Mill, Shelby, N. C., has established a branch mill at Cherryville, N. C. He will continue to make his home in Hickory.

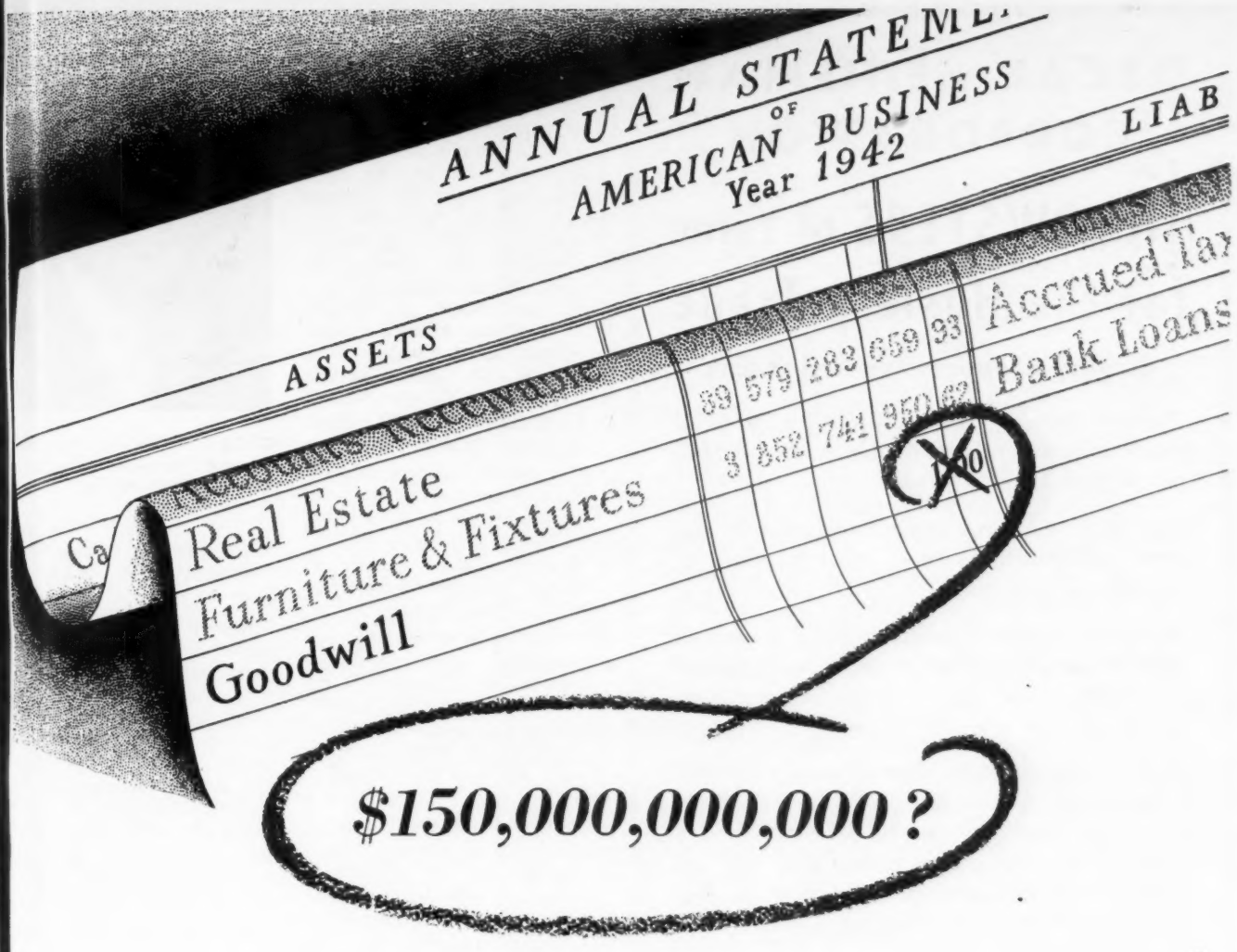
W. Benton Pipkin has been elected president of Edna Mills Corp., Reidsville, N. C., succeeding his father, the late J. B. Pipkin. He will continue to serve as treasurer, also. **Clarence L. Jolly,** general manager and superintendent of the company, has been appointed assistant treasurer.

A. J. Rosenstein, president of Myrtle Knitting Mills, Inc., and Hartford Spinning, Inc., Unionville, Conn., has resigned for service abroad as field director with the Office of Foreign Relief and Rehabilitation Operations. He will be succeeded at the mills by his brother, **Nathan Rosenstein.**

Albert H. Gordon, of Kidder, Peabody & Co., New York, has been elected to the board of directors of Tubize Chatillon Corp., New York.

Richard B. Leake, Jr., previously executive vice-president in charge of manufacturing at E-Z Mills, Inc., is now in charge of the knitted wear section of the Office of Civilian Requirements, Washington, D. C.

Giles E. Hopkins has been appointed research manager of Textile Research Institute, Inc., New York. A graduate of M.I.T., Mr. Hopkins was for many years technical director of the Bigelow-Sanford Carpet Co. He was one of the organizers of the Industrial Research Institute, a group of directors of research brought together to study the administration problems peculiar to research and technical personnel. He succeeds **Malcolm E. Campbell,** who has been appointed dean of the textile school at North Carolina State College, but who will continue to be active in in the affairs of the Institute as a member of its Technical Research Committee. In addition to his connection with Bigelow-Sanford, Mr. Hopkins has been chemist with Factory Mutual Fire Insurance Laboratories; chemical engineer with the Research Division of the United Shoe Machinery Corp.; technical director of the U. S. Asbestos



GOODWILL is intangible, but as it underlies all business transactions, it may be expressed in terms of the Nation's gross dollar volume . . . or about 150 billions for 1942!

An asset of such tremendous value must be safeguarded . . . especially in wartime. Bombproof vaults and gilt-edge insurance offer no protection . . . only a buyer-seller appreciation of its worth can preserve it against the hazards of intolerance and misunderstanding.

The higher the value that can be placed on Goodwill, the greater is industry, prosperity, and employment. In these difficult days for American business, it would be well to keep in mind the true significance of this asset . . . regardless of how it is carried on the books.

NATIONAL ADHESIVES

DIVISION OF

NATIONAL STARCH PRODUCTS INC.

Main Office: 820 Greenwich St., New York

Chicago — Philadelphia — Boston — Indianapolis — San Francisco
and All Principal Cities

OSCAR HEINEMAN CORPORATION

THROWSTERS of Yarns for the Hosiery Trade

Quality Products for Fifty Years

There is nothing that will take the place of years of practical experience in the processing of high quality yarns.

Our formulas have been developed in our own laboratory, by men having years of practical experience.

We invite hosiery manufacturers to submit their throwing problems. We are prepared to process your yarns in the manner best suited for your particular needs.

While a considerable part of our equipment is operating on yarns to be used in various kinds of materials for our Armed Forces, which must be given preference, we are putting forth our best efforts to give our customers, operating on Civilian Goods, satisfactory service.

We are proud of the fact that we were pioneers in the Practical application of *Avconit in the sizing and processing of high twist rayon yarns.

Our processing will be found equally satisfactory on either Viscose or Acetate yarns. We recommend our R-50 *Avconit formula for Bemberg and Viscose unoiled yarns and our R-60 formula for oiled yarns.

For Celanese and other Acetate yarns we recommend either our R-50 *Avconit formula or R-70 formula depending on the method used in dyeing.

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American Viscose Corp.

Division of Raybestos-Manhattan Inc.; and, more recently, chief of the Industrial Production Section of the Reoccupation Division of the Office of Economic Warfare. Mr. Hopkins will have the advisory help of the Technical Research Committee of the Institute, whose members include: **W. D. Appel**, chairman, **A. G. Ashcroft, F. Bonnet, Winn Chase, Alban Eavenson, Milton Harris, Charles J. Huber, W. O. Jellene, Rinaldo A. Lukens, Thomas Nelson, E. R. Schwarz, R. W. Vose**, and **A. C. Walker**.

Sidney H. Scheuer, head of Scheuer & Co., New York, who has been in Washington for some time, has been appointed assistant director in charge of imports for the Office of Economic Warfare.

William R. Reiser has been appointed general manager, secretary and treasurer of Lima (Ohio) Woolen Mills Co. He joined the company in 1941 after six years with the Strutwear Knitting Co., Minneapolis.

H. P. Smith Jr., director of Armstrong Cork Co., Lancaster, Pa. and vice-president in charge of manufacturing, has resigned because of illness.

Eugene Lutz, for the last ten years with J. P. Stevens & Co., New York, has joined Iselin-Jefferson & Co., New York to take charge of that firm's technical department. He will be in charge of all styling and development work.

James M. Bailey, plant superintendent, of Judson Mills, Greenville, S. C., has been appointed plant manager. **J. C. Clark** is plant superintendent and **C. W. Bendigo**, superintendent in charge of research. **F. J. Aiken** and **C. H. Lawton** are assistant superintendents.

Will R. Ingram, an official of Ken-Rau Spread Co., Dalton, Ga., has been elected secretary of the Tufted Bedspread Association, succeeding **J. K. Dickson**, resigned.

W. Carl Johnson has been appointed plant superintendent of American Spinning Co., a division of the Florence Mills, Greenville, S. C. **W. W. Rodgers** is general superintendent of the Greenville plant, in addition to his duties as superintendent of the Poe mill.

L. Ransom Burts, lately representative of J. L. Stifel & Sons, Inc., has become Atlanta area representative for

GILES E. HOPKINS, appointed research manager of Textile Research Institute, Inc.

Southeastern Cottons, Inc., succeeding the late Larry McCoy.

Robert J. Robertson has resigned as superintendent of the cotton and rayon division of Lorraine Mfg. Co., Pawtucket, R. I., and has been appointed superintendent of the Duplan Corp. plant at Hazleton, Pa., succeeding **John H. Habicht**, who had been with the organization since 1905 and is now retiring. Mr. Robertson is succeeded at Lorraine by **David Dott, Jr.**

Frank H. Bise, lately Pacific Coast representative of the Propper - McCallum Hosiery Co., with headquarters in Los Angeles, is now representing Textron, Inc., as western regional sales manager. Textron is a subsidiary of Atlantic Rayon Corp.

Ruth Joan Schoenberg, for six years with A. M. Tenney Associates, New York, has resigned. She is taking a style research trip to Mexico and South America.

Richard F. Loomis, for the last 12 years southwestern representative for Iselin-Jefferson Co., has assumed management of the newly-opened branch office in Dallas, Texas, of Deering, Milliken & Co.

Herbert J. Cunliffe, formerly engineer with Russell Mfg. Co., is now general manager of Delite Fabrics, Inc., Westerly, R. I. He succeeds **A. A. Godeille**, who resigned.

Sydney P. Munroe, who has been in general charge of the cost department of Wellington Sears & Co., New York, has become general manager of Samoset Mills, Talladega, Ala. **Aubrey Hobbs**, formerly assistant superintendent of Samoset Mills, has been promoted

ARALAC*, the new protein fiber made by Aralac, Inc., from milk, opens many new possibilities to textile manufacturers. But the processing of fabrics containing Aralac need present no problems when Colgate-Palmolive-Peet soaps and detergents are used. C.P.P. wetting, fulling, scouring and dispersing agents are effective on all types of materials, regardless of changes due to the war or other reasons.

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A fabric desized with EXSIZE goes to the kiers almost 100% free of sizing, therefore cleaner and requiring a shorter after-rinse and boil. In the bleaching and dyeing steps, this cleaner cloth may affect still another saving—in the quantities of chemicals needed. *That's important today!*

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PABST BREWERIES

NEWS ABOUT MEN

to superintendent, succeeding **Frank K. Petrea,** resigned.

Charles W. Carvin has been appointed vice-president in charge of sales of the Industrial Rayon Corp., Cleveland, Ohio, succeeding **George F. Brooks,** who has resigned after 17 years with the company to become a partner in the Empire State Mills Inc., New York. Mr. Carvin joined the company in 1937 and has been vice-president since 1941 in charge of the company's yarn division. He will continue to maintain his headquarters in New York. **Alvin A. Schoenberger,** heretofore in charge of the cloth division, has been named assistant sales manager in charge of cloth, hosiery and all knitting yarns. **George I. Rounds,** Industrial's sales representative in New England since 1939, following 12 years of similar service for the company in Chicago, Chattanooga and Charlotte, N. C., has been appointed assistant sales manager in charge of tire and weaving yarns.

F. G. Barnes has been appointed manager of the cotton department of the Bibb Mfg. Co., Columbus, Ga. Mr. Barnes has been with the firm for 24 years.

William T. Swoyer, Jr., formerly assistant manager, has been made manager of Leon Ferenbach, Inc., Johnson City, Tenn., succeeding the late Lewis T. Harrower.

Jean P. Mervine, for the last three years with the Philadelphia office of American Viscose Corp., has been transferred to the "Fibro" Sales Division of the company's New York office. He is succeeded in Philadelphia by **Lawrence H. Nolte.**

F. E. Grier, an official of Abney Cotton Mills, Greenwood, S. C., and president of the Bank of Greenwood, has resigned his position with the bank to devote his full time to the mills.

E. H. Wolfes, credit manager of Celanese Corp. of America, New York, has resigned. **J. E. Chambers** has been named credit manager of the yarn and fabrics division and **J. H. Tunison** has been appointed credit manager of the plastics division.

Roland L. Lee, formerly with the Southern Regional Research Laboratory at New Orleans, La., has become a member of the staff of Callaway Institute, Inc., LaGrange, Ga.

CHARLES W. CARVIN, now vice-president in charge of sales of Industrial Rayon Corp.

GEORGE F. BROOKS, retiring vice-president of Industrial Rayon Corp.

Alvord Eiseman has resigned as instructor in textile design at Cooper Union, New York, to become assistant to **Cedric Gibbons** in the technicolor division of Metro Goldwyn Mayer, Hollywood.

Edward J. Vogel, superintendent of Interstate Hosiery Mills, Lansdale, Pa., has resigned after almost 19 years with the company. He is going into business on his own account to conduct a gray goods brokerage and finished goods jobbing business. He has been joined in this business by **Harry Burch,** who has resigned as mill superintendent for the Philadelphia division of Interstate Hosiery Mills.

R. P. Wilder, formerly of Clinton, S. C., has become associated with the personnel office of U. S. Rubber Co., Hogansville, Ga.

E. S. Bennett has been named superintendent of Dallas Mills, Huntsville, Ala., succeeding the late W. L. Denham. Mr. Bennett had

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The strength that comes from the union of strong forces is what makes the might of the Allies. It is not too far-fetched to use this analogy when speaking of ETHOCEL. For, in addition to possessing the important characteristics listed above, ETHOCEL may be readily combined with other materials and imparts these characteristics to them.

For example: ETHOCEL can add toughness, or flexibility, or other qualities to formulations of spirit varnishes, nitrocellulose lacquers and even wax compositions.

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These qualities have created a great demand for ETHOCEL in war use. These attributes point out its future uses as well. Make a note of ETHOCEL'S compatibility—it may stand you in good stead when ETHOCEL is again available in quantity.

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SODIUM NITRITE

NEWS ABOUT MEN

been assistant superintendent for some time.

George M. Allen, formerly in charge of all production of American Viscose Corp., Wilmington, Del., will be head of the newly-formed Viscose Division, while **Henry H. Bitler,** previously the corporation's assistant technical director, will be in charge of the Acetate-"Vinyon" Division. The supervision of both viscose and acetate rayon product had become too complex to be handled with maximum efficiency by a single division.

Ernest O. DeFore, superintendent of Callaway Mills, Unity plant, LaGrange, Ga., has been transferred to Manchester, Ga., as superintendent of the plant there, succeeding **J. Lamar Moore,** who has resigned. **J. Morgan Jackson** has been transferred from superintendent of Calumet plant of the company, LaGrange, to the Unity plant succeeding Mr. DeFore, and **C. L. Taggart,** overseer of carding and spinning of Calumet plant, has been promoted to superintendent, succeeding Mr. Jackson.

Louie Burkes, production manager for Muscogee Mfg. Co., Columbus, Ga., has been promoted to assistant superintendent.

Robert J. Adams, superintendent of the Peerless Division of Thomaston (Ga.) Cotton Mills since 1934, has been appointed superintendent of Thomaston Cotton Mills, succeeding **N. L. Whitten,** who has held that position for 12 years, and who has been with the company for 41 years, retiring from active business last July.

H. V. Murdough has been appointed superintendent of Industrial Mill, Rock Hill, S. C., succeeding **J. A. Wooten.** He was formerly of Highland Mill, Griffin, Ga.

Barney Dalton, head electrician at the Spindale (N. C.) Mills, Inc., recently resigned to become supervisor of electrical equipment at American Yarn & Processing Co., Mount Holly, N. C., and six cooperating mills in that area.

P. L. Lindsey has become mechanical superintendent of Exposition Mills, Atlanta, Ga., succeeding **James C. Edwards, Jr.,** who has been promoted to plant superintendent. Mr. Lindsey was formerly with the Stonewall (Miss.) Cotton Mills.

GEORGE M. ALLEN, now manager of Viscose Rayon Production, American Viscose Corp.

HENRY H. BITLER, now manager of Acetate Rayon and Vinyon Production, American Viscose Corp.

Raymond E. Henderson, superintendent of Hickman and Graniteville plants of Graniteville (S. C.) Mfg. Co., has resigned to become superintendent of the Dan River Division of Riverside & Dan River Cotton Mills, Danville, Va.

D. C. Prim, for over 30 years superintendent of spinning of Muscogee Mfg. Co., Columbus, Ga., has retired, and **C. L. Hall,** superintendent of carding at the same mill, has been made head of spinning also.

M. T. Hartsell has resigned as superintendent of carding and spinning of Kindley Cotton Mills, Mt. Pleasant, N. C., and become superintendent of carding of Stowe Mills, McAdenville, N. C.

A. B. Brown, Lincolnton, N. C., formerly night superintendent of Harden (N. C.) Mfg. Co., has returned to this position.

U. C. Crenshaw, night superintendent of carding at the Eureka plant of Springs Cotton Mills, Chester, S. C., has

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Penn Salt Liquid Caustic Soda is shipped in tank cars specially designed for speedier, safer unloading. These modern 8000-gallon tank cars have a protective lining, are insulated and are equipped with caustic resistant valves and interior fittings. They can be quickly and completely emptied—no wasted caustic, no lost time.

Penn Salt Caustic Soda is supplied as 50% and 72-73% solutions in tank car quantities; as a solid in 750 lb. drums; or in flake form in 400 lb. and 125 lb. drums.

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W. J. Westaway Co., Ltd., Hamilton & Montreal . . . Canada
Geo. Thomas & Co., Manchester, Eng. . . European Agent

been promoted to day superintendent of the same department succeeding **O. V. Coggins,** resigned.

Max R. Dixon, who has held an executive position in the office of Ella Mill, Shelby, N. C., has resigned, to become assistant manager of the Shelby office of M. & J. Finance Co.

D. C. Prim, overseer of spinning of Muscogee Mfg. Co., Columbus, Ga., for 30 years has retired. He is succeeded by **C. L. Hall.**

Peter F. Carbone has been appointed industrial relations director of Naumkeag Steam Cotton Co., Salem and Peabody, Mass. He has been vice-principal of the Salem High School for the last three years.

R. M. Neall, manager of the contract sales division of Bigelow Sanford Carpet Co., Thompsonville, Conn., for the last 15 years, has been named assistant sales manager.

M. L. Rhodes, Lincolnton, N. C., a graduate of the Textile School of the North Carolina State College, has been elected superintendent of the North Carolina Textile Institute near Gastonia, N. C.

Arthur Jones, formerly agent of Northfield (Vt.) Mills, has accepted a position with Thomas Kay Woolen Mills, Salem, Ore.

Harry I. Spinner, formerly of Maiden Form and Rite Form, is now associated with Munsing-wear, Inc., Minneapolis, Minn., as superintendent in charge of the "foundette" manufacturing division. Mr. Spinner has had years of experience in corset and brassiere manufacturing.

R. P. Wilder, formerly principal and athletic coach of the Clinton (S. C.) High School, has resigned to accept a position with United States Rubber Co., Hogansville, Ga.

W. O. Reed, formerly of Gastonia, N. C., has become superintendent of spinning at the new plant of Clark Thread Co., Pelham, Ga.

Louis Cohen has accepted the superintendency of the Birmingham (Ala.) Cotton Mills, succeeding **O. H. Dunn,** who has become superintendent of the Tifton (Ga.) Cotton Mills.

Mac Haiston has become superintendent of Houston (Tex.) Cotton Mills.

J. D. Smith, superintendent of spinning, Riverside unit of Riverside & Dan River Cotton Mills, Danville, Va., has resigned.

C. L. Adkins is now superintendent of Nelson Cotton Mills Co., Whitnel, N. C., having resigned as superintendent of Clover (S. C.) Spinning Co., to accept this new place. He has been succeeded at Clover by **W. E. Holmes.**

Richard Seifert has become overseer of weaving at the Bell Worsted Co., Worcester, Mass.

Jack Newsome has resigned as superintendent of the mechanical department of Rushton Cotton Mills, Griffin, Ga., and has accepted a similar position with Laurena (S. C.) Cotton Mills.

A. J. Wright has been promoted to superintendent of Plant No. 3, Carolina Textile Corp., Hamer, S. C. He was previously overseer of twisting and spinning.

Ralph L. Moseley has resigned as dyer for Texas Textile Mills, McKinney, Tex., and has returned to Sylacauga, Ala.

R. J. Adams is plant manager of the Hollywood Textile Co., New Braunfels, Tex. This is a reorganized textile plant, formerly Texas Gauze Mills.

A. S. Griffith has resigned as assistant superintendent of Buck Creek Cotton Mills, Siluria, Ala., and has accepted position of overseer of twisting, spooling and warping at Laurens (S. C.) Cotton Mills.

Roland L. Lee of the Southern Regional Research Laboratory, New Orleans, La., has joined the staff of Callaway Institute, LaGrange, Ga., as cotton technologist and dean of the Institute's educational activities.

Charles E. Willis has resigned as overseer of carding at American Thread Co., Dalton, Ga., and become overseer of carding at the Gayle plant of Springs Cotton Mills, Chester, S. C.

Paul Highcove, staff sergeant in the Army, former overseer at the Glenark plant of Uxbridge Worsted Co., Woonsocket, R. I., is a war prisoner in Germany.

George W. Little, superintendent of production at Hartsville (S. C.) Print & Dye

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The Waacs, that splendid corp of trained specialists are doing a fine job in many fields of Army effort, both at home and abroad. In their attractive uniforms, as serviceable as they are good looking, the Waacs make an impressive appearance.

The American Textile Industry is doing a wonderful job in the production of Waac uniforms from design to finish.

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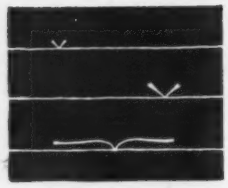

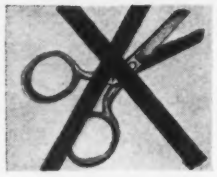

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NEWS ABOUT MEN

Works, United States Finishing Co., has been made superintendent of printing and dyeing at Pacific Mills unit, Lyman, S. C.

Jerry F. Underwood has become superintendent of carding of Glenwood Cotton Mills, Easley, S. C., having resigned a similar position with the No. 3 unit of Easley Mills, Liberty, S. C.

Fred K. Morris, formerly with Riverside & Dan River Cotton Mills, Danville, Va., has become superintendent of the spinning department of Merrimack Mills, Huntsville, Ala., succeeding **A. V. Wright.**

Carl D. Welch, formerly assistant superintendent of York (S. C.) Mill No. 1 unit, has resigned to become general superintendent of carding of Mill No. 2, Phenix Mills, Kings Mountain, N. C.

Textile Men in Armed Services

Roland Walsh, commanding officer of the Philadelphia QM Depot since July 20, has been promoted in rank from colonel to brigadier general. General Walsh is a graduate of the Citadel of Charleston, S. C. He was commissioned second lieutenant of infantry in 1912.

Dwight M. Wilhelm, formerly executive secretary of Alabama Cotton Manufacturers Association, has been promoted from major to lieutenant colonel. He is executive officer of Courtland Army Air Field, Alabama.

Samuel M. Littlejohn, of Clemson, S. C., is now a captain in Army QM Corps. He has lately returned from Europe and is aiding the Reclamation School at Camp Lee, Va. Captain Littlejohn was chief chemist for Roy Chemical Co., Charlotte, N. C., and previously assistant production manager for Burlington (N. C.) Dye & Finishing Co.

N. H. Aronsohn, head of the textile firm of the same name, in New York has recently been promoted to major in the Army Air Corps. He is stationed at Fort Benning, Ga.

Joseph Greenberg, a partner in American Textile Finishing Works, New York, has been inducted into the Army.

Irving S. Geer, on leave from Southeastern Cottons, Inc., New York, is now a lieutenant assigned to the Desert Training Center, Los Angeles, Calif.

Harold S. Bullard, on leave from Southeastern Cottons, Inc., New York, is a lieutenant at the Advanced Flying School, Columbus, Miss.

William H. Dribben, associated with the gray goods department of Cone Export & Commission Co., New York, before entering the Army, has been promoted from captain to major. He is on service overseas.

Benjamin Erlanger, secretary of Everfast Fabrics, Inc., New York, now in England with the U. S. Army Air Forces, has been promoted to captain.

Arthur A. Shernoff, on leave from Shertone Textile Corp., New York, received his commission as second lieutenant in Army Air Forces recently.

Harry Munroe, of the Atlanta office of William L. Barrell Co., has been inducted into the Army.

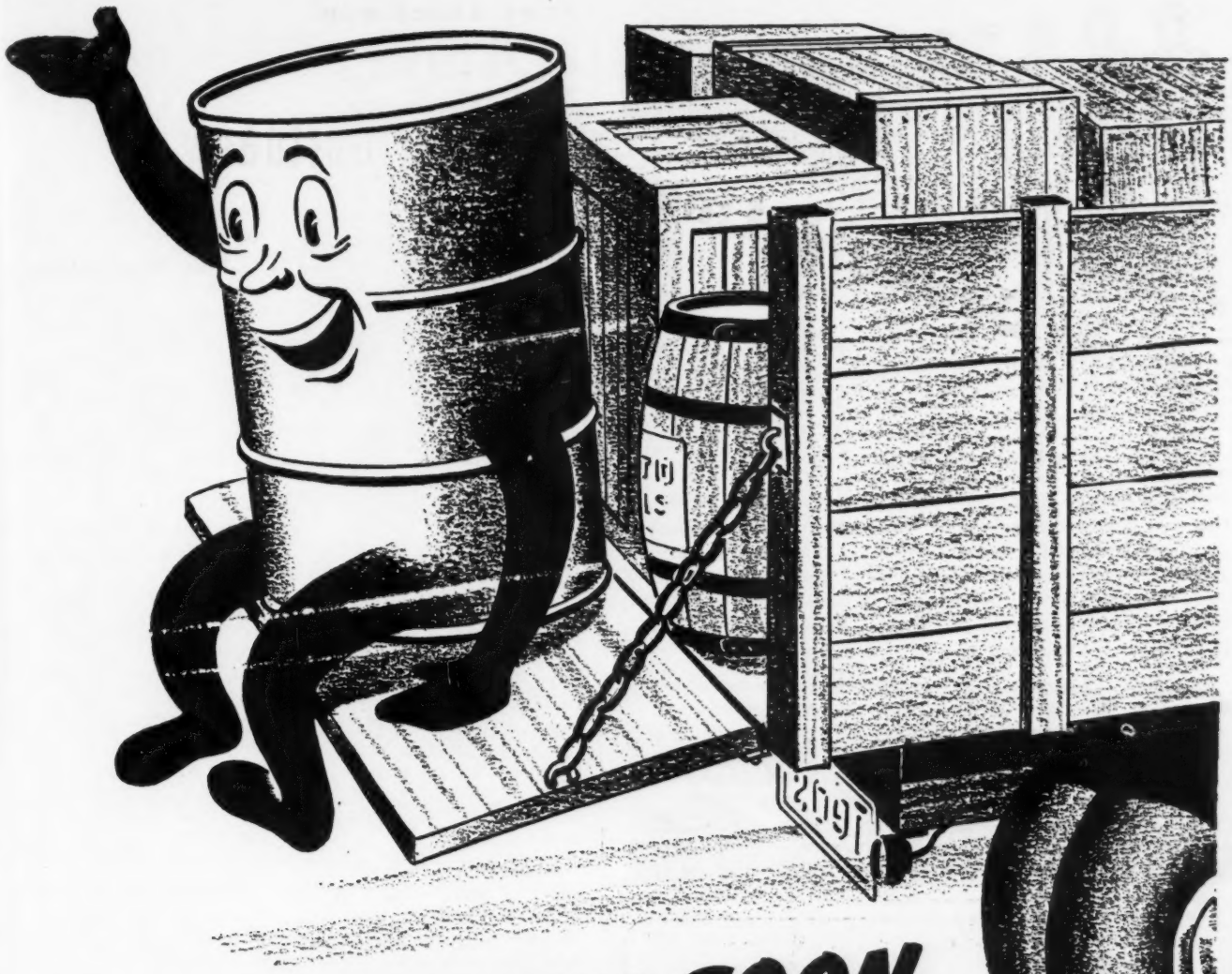
Frank Martin Page, formerly with P. H. Hanes Knitting Co., Winston-Salem, N. C., where he was assistant production manager, who joined the Marine Corps at Washington in August, 1942, is now captain commanding the guard company of marines at the barracks in Charleston, S. C., Navy Yard.

William Lee Mills, Jr., who before he went into the Army last year, was a foreman in Cannon Mills Co., Kannapolis, N. C., has been promoted to first lieutenant at Fort Dix, N. J.

Robert L. Hamilton, superintendent of spinning of Darlington (S. C.) Mfg. Co., on leave, has been commissioned a second lieutenant and is stationed at North Camp Hood, Texas.

Gus T. Smith, Paducah, Ky., formerly connected with the Claussner Hosiery Co., who entered the Army in March, 1942, as a second lieutenant at Chicago Quartermaster Depot, has been promoted to the rank of captain.

Woodrow E. Dunn, superintendent of Chiquola Mfg. Co., Honea Path, S. C., until he entered the service, who is stationed at Fort Benning, Ga., has been promoted to captain.



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In returning me, and all your other empty Nopco Drums so promptly, Mr. Superintendent, you're helping yourself as well as the war effort.

You help the war effort, because Nopco drums—as you know—are made of steel, and steel is a *vital* metal needed by *all* war industries.

And you help yourself by making it possible for Nopco to avoid costly delays in filling your need for essential materials. That's what I mean when I say *I'll see you again soon.*

So please keep up the good work, Mr. Superintendent. Return all Nopco empty drums as soon as they're empty, so we can do our "*full*" part in meeting your Nopco requirements and Uncle Sam's too.

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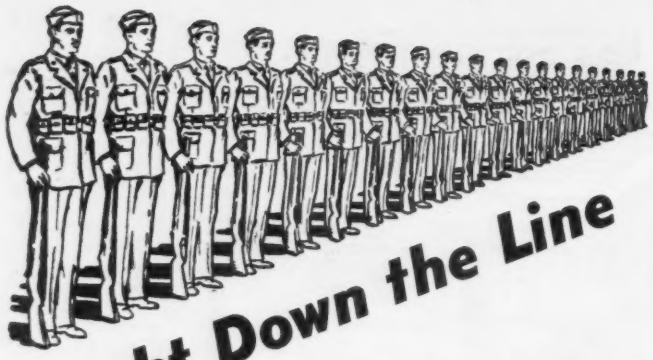

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Obituary

Abe Goodman, 79, chairman of the board of American Finishing Co., Memphis, Tenn., a former bank executive and former member of city council, died Sept. 2.

Laurance Mayer, 53, president of Rollins Hosiery Mills, Des Moines, Iowa, died Sept. 23 at his Des Moines home. He was for many years with Julius Kayser & Co., ultimately vice-president in charge of merchandising, advertising, and foreign subsidiaries. In 1941 he resigned to head the Rollins Hosiery Mills.

Clinton A. Bennett, 62, long identified with the cotton yarn business in New York, died Oct. 3. He had been with Paulson Linkroum & Co., James F. White & Co., and Bennett & Goldey until he joined the cotton yarn department of Iselin-Jefferson Co. with which he was associated at his death.

Arnold Hunziker, credit manager and assistant secretary of American Bemberg Corp. and North American Rayon Corp., New York is dead.

Dr. Arthur A. Ticknor, chemist in charge of basic dyes and lake pigments at Calco Chemical Division of American Cyanamid Co., Bound Brook, N. J., died last month.

L. E. Foster, 56, textile executive for many years, died recently in Greenwood, S. C. Mr. Foster was vice-president and general manager, also chairman of the board of the Abney chain of cotton mills, including Panola, Anderson, Belton, Courtenay and Grendel. He began his career as a loom-fixer.

Benjamin Few Zimmerman, 71, textile executive of Spartanburg, S. C., died Sept. 20 in that city. For the last 28 years Mr. Zimmerman had been head of the cotton departments of the Spartan and Drayton Cotton Mills. Prior to this he was connected with the Parker Cotton Mills, Greer, S. C.

Frederick J. Fenning, general office manager for William Whitman Co., New York, died Sept. 13. He joined the organization in 1906.

Samuel D. Lewis, 76, one of the founders of Brampton Woolen Co., died recently in Newport, N. H.

Thomas Franklin Cline, 85, Lincolnton, N. C., who with his father, built the second cotton mill in Shelby, N. C., which was later moved to Double Shoals, N. C., and is still operating, died Aug. 20.

Albert Kramer, 55, sales representative of Munsingwear, Inc., attached to the New York office, died Sept. 21.

Michael J. Isselhard, 75, sales manager of the Textile Yarn Co., Chicago, died recently.

Arthur A. Brown, 50, an executive of Kenwood Mills, Ltd., Arnprior, Ontario, died last month. He had been a member of the Kenwood staff since 1921.

Kurt A. Meyer, 62, president of Audiger & Meyer Silk Co., New York, died Sept. 21. He was at one time president of the Tie Silk Association.

Albert F. Richie, 41, traffic manager of American Finishing Co., Memphis, Tenn., died last month.

Will A. Grace, 69, accountant at Suncook Mills, died recently in Concord, N. H.

Harry F. Fitzpatrick, 57, superintendent of Dunn Woolen Mills, Martinsburg, W. Va., died recently. He had been associated with the mills for 35 years.

E. A. Hill, 67, superintendent of Clinton (S. C.) Cotton Mills and Lydia Cotton Mills, died Sept. 16 in Baltimore after a period of declining health.

Charles F. Hurd, 76, retired assistant superintendent of the yarn department of Wanskuck Co., died in Providence, R. I.

Nelson A. Wennberg, 71, office manager of Paragon Worsted Co., Olneyville, R. I., died recently.

Don Lee Redmond, 47, for the last 10 years superintendent of inspection room of Proximity Print Works, Greensboro, N. C., died Sept. 8.

Edouard Lizotte, 58, superintendent of spinning at Lafayette Worsted Co., died recently in Providence, R. I.

James H. Worrell, 40, shipping clerk for P. H. Hanes Knitting Co., Winston-Salem, N. C., died recently.

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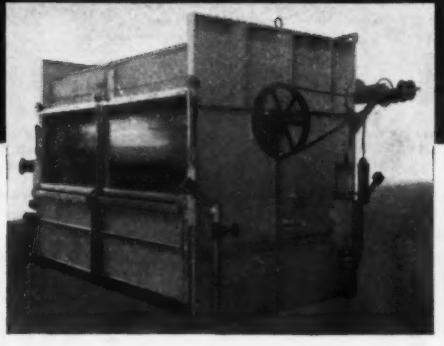

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TEXTILE MILL NEWS

Cotton Mill News

Bay State Thread Works, Springfield, Mass., have awarded contract to E. J. Pinney Co., Inc., Springfield, for alterations and improvements in mill. Blake A. Seaver, Springfield, is architect.

Bristol (R. I.) **Lace Works,** now in production on netting for military use, plans new one-story and part basement mill, 60x161 ft., with L-extension, 22x87 ft., on Bay View Ave. Cost reported over $60,000, with equipment. Application has been made for a priority rating. Barker & Turoff, Grosvenor Building, Providence, R. I., are engineers.

Dominion Textile Co., Ltd., Magog, Que., has begun erection of one-story addition to cotton mill, for which general contract recently was let to Anglin, Norcross, Ltd., Montreal, Que. Cost reported about $25,000, with equipment. T. Pringle & Son, Ltd., Montreal, are architects and engineers.

Firestone Cotton Mills of Canada, Ltd., Woodstock, Ont., have plans maturing for one-story addition, about 85x160 ft., to cost over $125,000, with equipment. Proposed to begin work soon. Hutton & Sauter, Hamilton, Ont., are architects and engineers.

Fisher Mfg. Co., Fisherville, Mass., purchased recently by Crescent Corp. of Fall River, has been sold by the latter to S. Robert Stone, Inc., of 85 Essex Street, Boston. The plant will continue to manufacture curtain goods, supplying only part of the requirements of the Stone firm.

Jackson, Mich.—Department of Justice, Lansing, Mich., plans rebuilding of textile plant at Jackson prison, recently damaged by fire with loss estimated close to $15,000.

Linen Thread Co., Johnson and Barney Sts., Baltimore, Md., has work under way on alterations and improvements in mill, for which general contract recently was let to Morrow Brothers, Baltimore.

Lorraine Mfg. Co., Pawtucket, R. I., will make alterations and improvements in mill. Bids have been asked and contract will be let soon.

Pacific Mills, Lawrence, Mass., has secured a permit to alter an office building so that it can be used for laboratories. Estimated cost is $7,600.

Pisgah Mills mercerizing plant, Brevard, N. C., has been put into operation, with W. H. Melton, general manager. He is also manager of the Pisgah Mills. Last fall Pisgah purchased the Ashworth building and a considerable amount of remodeling has since been done. The company is also constructing an addition in which carding and spinning equipment will be installed. The addition will be 82x36 ft.

Sellers Mfg. Co., Saxapahaw, N. C., has work under way on rebuilding portion of mill recently damaged by fire, with loss reported close to $50,000, including equipment. Fire occurred in main spinning room at plant.

Starcross, Inc., Greenville, S. C., has been chartered with capital of 40,000 shares of stock, no par value, to operate a mill for manufacture of cotton fabrics. F. C. Fant is president and treasurer; and J. M. Perry, vice-president and secretary, both of Greenville.

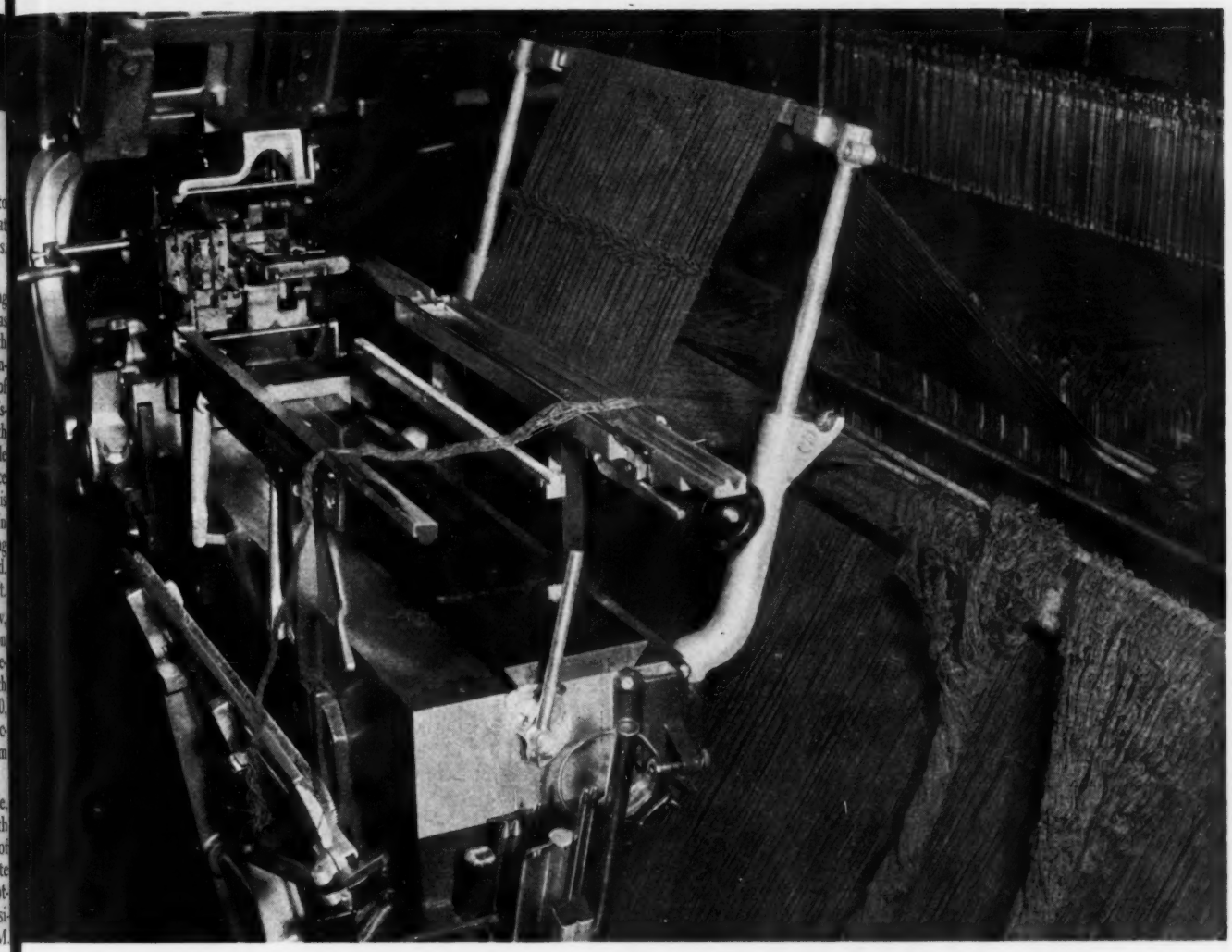
Southern Cotton Co. of Alabama, Birmingham, Ala., formerly Birmingham Cotton Mill, has been reorganized with the following operating personnel: O. H. Dunn, general manager; J. D. Moon, superintendent; C. P. Baker, overseer of weaving; J. S. Shell, overseer of carding; M. A. Cook, master mechanic, and J. P. Erwin, chief electrician, and J. J. Davis, overseer of spinning.

Twin City Textile Mills, St. Paul, Minn., have awarded contract to H. J. Blomstrand, St. Paul, for alterations and improvements in mill, following recent fire loss.

Wool Mill News

Chauvin Yarn Mill, Woonsocket, R. I., is installing carding and spinning machinery for the manufacture of woolen yarn in an idle mill property lately taken over by Ernest Chauvin.

Dominion Woolens & Worsteds, Ltd., Peterboro, Ont., has begun erection of one-story addition to local Bonnerworth Mill, for which general



Tying-In Wool Warp . . . at the Loom

ONE of the interesting features of the Barber-Colman PORTABLE Warp Tying Machine the fact that it is adaptable to a wide nge of fabrics. Four months ago in is publication we ran an advertisement showing it in use on rayon. Here an application on a wool warp. This achine is compactly designed so it ll work directly back of the loom in leys as narrow as 12". It is light, rdily built, and can be easily and ickly moved from one location to other. It is hand-operated and ties the warp in sections as shown, each ction or load being approximately 15" wide. The knotting mechanism, which includes a "stumbler" to eliminate missing any ends, is normally operated at about 300 knots a minute. All parts are precision made to extremely close standards and are fully interchangeable. A good operator can be trained in a short time, requiring principally the ability to be careful and pay attention to significant detail. Note in the picture the uniform row of clean knots shown on the load which has just been completed. Bulletin F-1256-4, which will be sent promptly on request, will describe this machine to you in greater detail.

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WARP TYING MACHINE

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Simplified DESIGN
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Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

contract recently was let to Eastwood Construction Co., Ltd., Toronto, Ont.; cost reported in excess of $60,000, with equipment. T. Pringle & Son, Ltd., Toronto, architects.

Parkin Yarn Mill has purchased the property in Pawtucket, R. I., which it has operated for 24 years. The mill manufactures novelty yarns. Plant contains 45,000 sq. ft. of floor space.

Premier Worsted Co. Raleigh, N. C., has been organized with a machinery set-up of 4,800 spindles and 48 looms. Herbert Lawton, of New York, is president of the company, and J. M. Shockey is superintendent. It will operate as a branch of Premier Worsted Co. with plant at Woonsocket and Bridgeton, R. I.

Washington Mills, Lawrence, Mass., formerly owned by the Textile Realty Co. of Boston and a subsidiary of the American Woolen Co., was sold Sept. 24, to the Mills of Lawrence, Inc., of Boston, a recently-formed corporation. The property comprises two modern concrete and brick factories, 700,000 sq. ft. of usable area, and six brick factories aggregating 800,000 sq. ft. At one time this plant operated 1,540 looms.

Rayon & Silk Mill News

American Enka Corp., Enka, N. C., has let general contract to Potter & Shackelford, Inc., Greenville, S. C., for several new additions to mill, to be equipped for increased output of high-tenacity rayon yarns for tire casings. Cost estimated close to $5,000,000. Work will begin at once. Program will increase the total output of all products of the plant by approximately 30% and will add 300 to 500 operatives to the pay roll. Project will require about eight months for completion.

Bowers & Lunstead Textile Co., Jamestown, N. Y., lately operating at former mill of Hall Textile Co., acquired a number of months ago, has discontinued operations permanently, and mill equipment is being sold.

E. I. du Pont de Nemours & Co., Rayon Dept., Buffalo, is converting part of local mill for manufacture of high-tenacity rayon yarns for use in production of tire casings, with installation of additional machinery and equipment. A portion of mill will continue production of short staple rayon fiber, as heretofore.

Morton Feldman, Inc., Mount Holly, N. J., plant being liquidated by David Speizman, Inc., West Pittston, Pa.

A. C. Lova Textile Mill, Juanita Building, Catasauqua, Pa., has been sold through David Speizman, Inc., West Pittston, Pa., to Wagner, Nixon & Mutchler, 186 Madison Avenue, New York, N. Y. New owners will operate the plant in the same location and with same personnel.

Hawley (Pa.) Weaving Co. recently organized, has begun operations in a local mill, secured under lease, for manufacture of rayon fabrics.

Industrial Rayon Corp., Cleveland, Ohio, has let general contract to Austin Co., for additions to branch mill at Painesville, comprising several large buildings, to be equipped for production of high-tenacity rayon yarns, increasing present capacity by about 22,000,000 lbs. annually. Cost over $5,000,000, instead of smaller sum, previously reported. Wilbur Watson & Associates, Cleveland, are architects and engineers.

Verney Shawmut Mills, Fall River, Mass., a yarn and thread mill lately acquired by Gilbert Verney (as reported last month) will probably install looms for weaving spun-rayon fabrics. Richard B. Chace, previously treasurer of Shawmut Mills is general manager under the new ownership. D. J. Canning is president and treasurer.

Westover Fabrics, Inc., West Warwick, R. I., has been bought by David E. Seidman, lately with Colonial Mills, New York.

Knitting Mill News

A. Q. Mills, Timmonsville, S. C., warp knit goods, owned and operated by J. Ed Anderson and A. T. Quantz, both of Timmonsville, and Phillip Wick, of New York, who also own the Phillip Wick Mills of New York, are the purchasers of the Mock Judson Voehringer Co. plant at Siler City, N. C. Property will be used to expand their production. The new unit will open Dec. 1.

Baker - Cammack Hosiery Mills, Inc., Burlington, N. C., has leased the Earl Cook Store Building in Boone, N. C., will install machinery and operate

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Setol is an oil emulsifier—*it breaks down oils*—hence the speed with which it penetrates and removes stubborn coatings of grimy oil and grease. Though best known for its wonderful cleansing action on mill floors, *Setol* has proved equally effective for cleaning heavily soiled painted walls and ceilings. It's thoroughly safe . . . free from harmful properties that *clean away* the finish and discourage repeated cleaning. *Setol-cleaned surfaces save frequent redecorating!* *Setol* is both soluble and sudsless. Compounded in *Finnell's* own powder mill. Sold in barrels, half-barrels, quarter-barrels.

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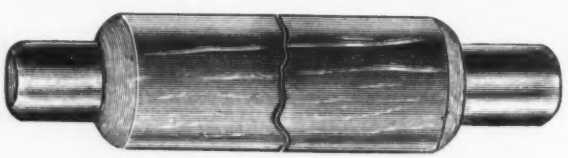
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it as a branch for manufacture of men's cotton and rayon socks.

Beaunit Mills, Inc., 450 7th Ave., N. Y., have taken over Phoenix Mills, Inc., Statesville, N. C., recently purchased, and will operate as a branch mill in future.

P. J. Brown Full-Fashioned Hosiery Mill, North Hickory, N. C., has been bought by J. L. Thompson, Jr. of Statesville and associates.

Eader Textile Corp., Hagerstown, Md., formerly R. A. Knitting Mills, operated by J. C. Roulette & Sons, Inc.—Mill of this company has been acquired by Fairchild Aircraft Division.

P. H. Hanes Knitting Co., Hanes, N. C., recently opened a nursery for the benefit of the company's employees. Small children are kept after school hours, while babies are kept all day while their mothers are at work in the plant.

Headen Hosiery Mill, Shelby, N. C., has begun operation of new branch mill at Cherryville, N. C., where building recently was leased.

Kenosha (Wis.) **Full-Fashioned Hosiery Mills** (previously reported) have taken over one-story industrial building at Fort Atkinson, Wis., and will remodel and equip at once for new mill for Cownie Division.

Pilgrim Knitting Mills, 114 Kingston St., Boston, Mass., have filed notice of organization to operate a local mill. Jacob B. Pelton, 11 Wilcock St., Dorchester, Boston, is head.

Pilot Mountain (N. C.) **Hosiery Mills, Inc.,** has started up with 22 B5 knitting machines and auxillary equipment on women's and children's anklets. R. B. Davis is president and treasurer.

S. & W. Hosiery Mills, Englewood, Tenn., has established a branch unit at Athens, Tenn., for the manufacture of women's sport hose. Edward Smith and Lawrence Webb of Englewood, are the owners.

Weber Knit Sportswear, Inc., New York, N. Y., recently organized, care of Friedman & Friedman, 29 Broadway, attorney and representative, plans operation of local knitting mill.

Willis Hosiery Mills, Concord, N. C., are erecting a brick and concrete addition to their plant to be used for the storage of chemicals, dyestuffs, etc.

Processing Plant News

Apponaug (R. I.) **Co.** h approved plans for addition boiler house at mill, report to cost about $15,000, and w begin work at once.

Arnold Print Works, No Adams, Mass., recently d solved, have paid a total $2,840,190 in liquidating di dends on outstanding comm stock.

William Butler Co., Pro dence, R. I., manufacturers solvents and detergents, w start operation of a wool sco ing plant at Marble Fal Texas, on Nov. 1. There a also facilities for grading, so ing and storage.

California Piece Dye Wor Los Angeles, Calif., plans co struction of a new fabr printing plant at 332 So Ave. 17, Los Angeles, Cal Building will be 50 x 150 f and cost $10,000.

Illinois Shade Cloth C North Chicago, Ill., will e tablish new branch mill building at 316–18 South C lege St., Charlotte, N. C., cently leased.

Johnson & Hardt, Inc., P erson, N. J., have succeeded the dyeing and finishing cotton and rayon yarns f merly done by F. C. Reinhar at 93 Belmont Ave.

North Carolina Fabri Corp., Salisbury, N. C., h been made a finisher licens under the "Crown" Test Plan of American Visco Corp.

Warren Textile Print Wor West Warren, Mass., has a quired from Crescent Corp. Fall River, the mill buildin at Bondsville formerly op ated by Boston Duck C Some 600 to 700 workers w be employed on screen pri ing. Company is controlled Endelson family, princip owners of Barrett Textile Cor

Miscellaneous Mill News

Northwest Flax Industri Inc., Winona, Minn., (pre ously reported) has had pla drawn by Bovum, Schubert Sorensen, Winona, architect for proposed new flax proce ing mill for production f Government. Main mill w be one-story, 110 x 130 ft. boiler house, 40 x 74 ft., w be built. Entire project w cost $215,000, with financi by Government.

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Wherever they are — wherever they may go — our fighting men have the constant protection of fabrics finished to meet the needs of global war. With experience born of peacetime service but with a resourcefulness geared to the needs of war, Arkansas takes pride in producing at top speed for textile processing and finishing plants whose fabrics must meet rigid government specifications.

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FUNGICIDE M: a single product combining a mildew inhibitor and water repellent for producing a mildewproof water repellent finish on cotton in one operation.

FUNGICIDE P. G.: an anti-mildew agent for mildewproofing cotton by the two bath process.

FUNGICIDE G: used in conjunction with water repellents in a one bath treatment to mildewproof cottons and impart a water repellent finish.

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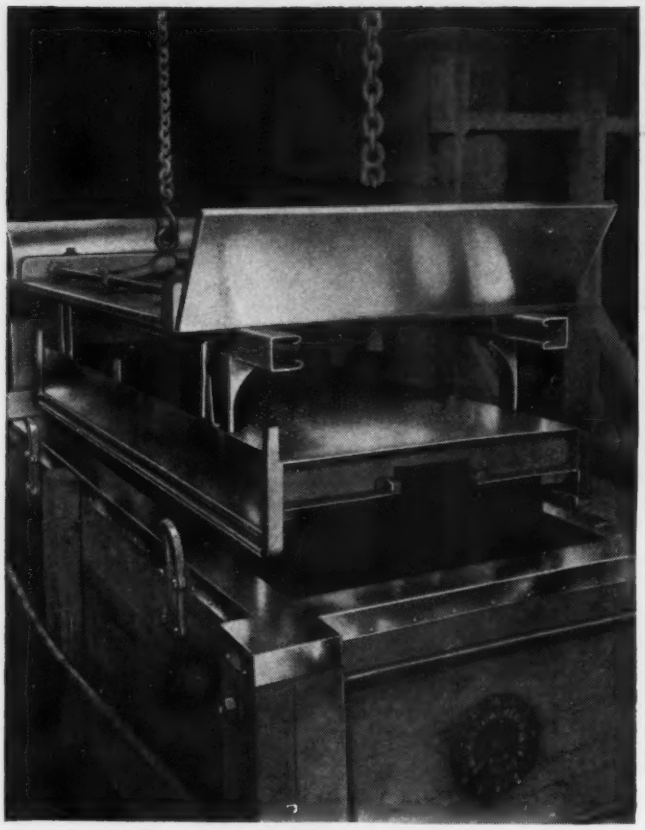
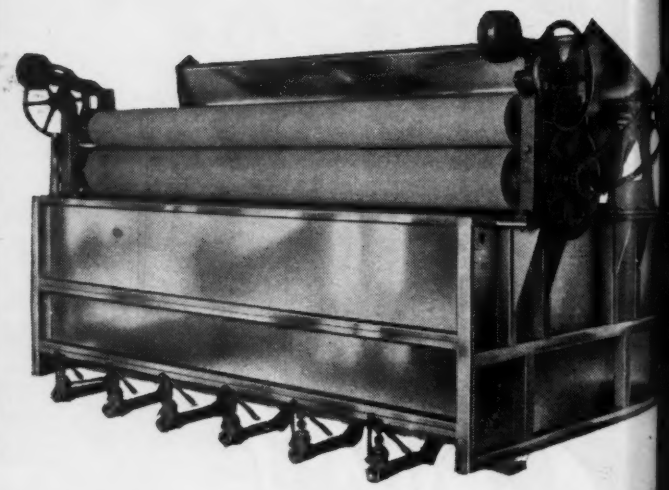


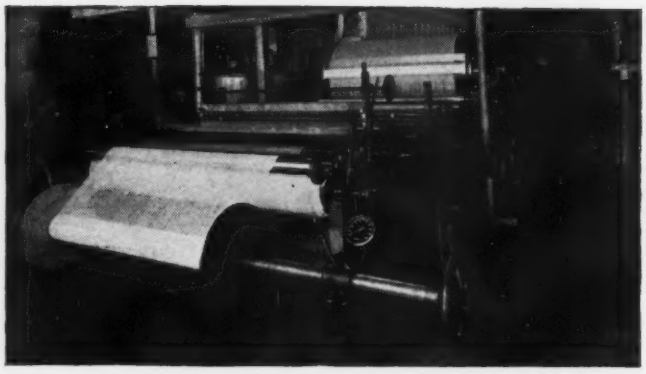


Even the most corrosive wash liquors are used with safety in this stainless steel slack-type rope washer (above).

The yarns dyed in this vat (left) are uniform, because stainless steel does not affect the chemicals used in dyeing operations.

In Wet-Processing,

STAINLESS STEELS RESIST CORROSION



The stainless steel sizing box and rolls of this 7-cylinder rayon slasher guarantee long-time service in high-speed operations.

The corrosive effect of dyes and many other chemicals on wet-processing equipment has ceased to be a problem for textile manufacturers who are using stainless steels in their mills.

They have found that stainless steel retains its mirror-like surface even after years of contact with synthetic and natural dyes, bleaching agents, and acids, as well as many other processing chemicals.

Almost as important as permanent resistance to corrosion is the ease with which stainless steel can be cleaned. Since no chemicals or dyes are absorbed by the metallic surface, there is no need for lengthy "boiling out," making possible quick successions of runs in a single vat.

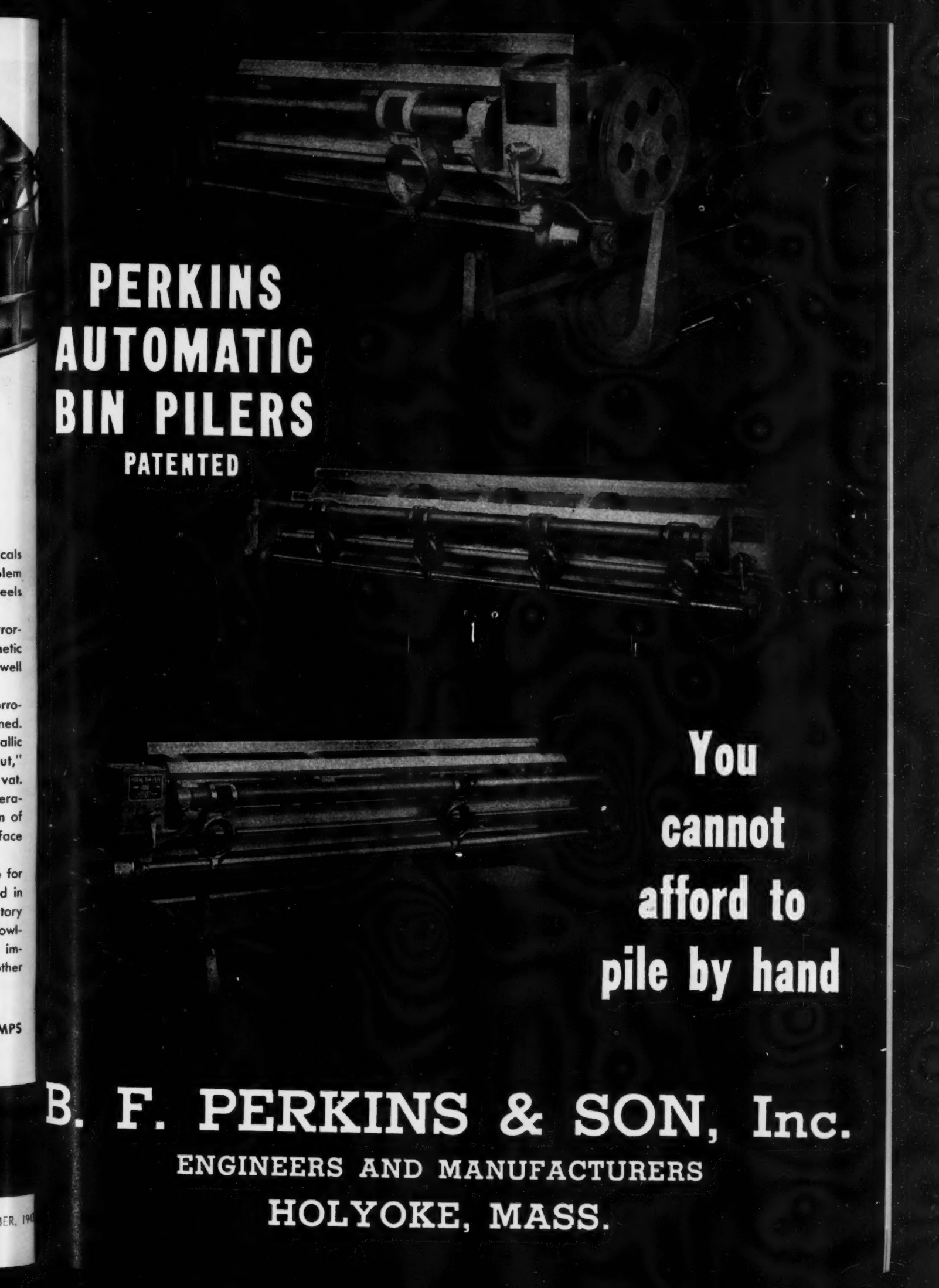
Stainless steels offer advantages in other mill operations... they are long-wearing and need a minimum of maintenance... their permanently smooth, hard surface helps to prevent snagging, tearing, and snarling.

Although we do not make stainless steel, we have for more than 35 years produced the ferro-alloys used in making stainless and other alloy steels. From laboratory and plant experience we have gained practical knowledge of their applications, and are ready to give impartial assistance in the selection of a stainless or other alloy steel to meet your particular requirements.

BUY UNITED STATES WAR BONDS AND STAMPS

ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario

Electromet
Trade Mark
Ferro-Alloys & Metals



PERKINS AUTOMATIC BIN PILERS

PATENTED

You cannot afford to pile by hand

B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

Strength TO SPIN AT HIGH SPEEDS..

..ARMED AGAINST CORROSION

This is a resin-coated spinning bucket. It is *forged* from strong aluminum alloy. Thousands are in use in the rayon mills. The high strength of these Alcoa forgings enabled the industry to step up spinning speeds to as high as 14,000 rpm. Their baked phenolic resin coating protects them against attack by the chemicals employed.

It's another case of a plastic and an aluminum alloy working as a team, doing a job which neither could do as well alone.

But the aluminum provides more than high strength. Its dimensions and shape remain accurate, holding the spinning buckets in balance, a vital factor at high-speed operation. The buckets are light in weight, making handling easier. And, should there be a break in the coating, there will be no discoloration of the product.

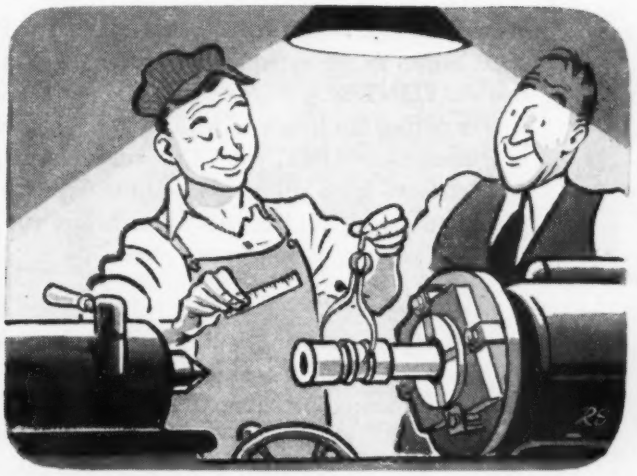
Imagineering conceived this joint use of plastic resins and aluminum, and Alcoa engineers developed the technique for making the coating adhere firmly to the metal. Thus, a substantial market was established for both materials. The postwar world is certain to see a succession of such designs, in which the desirable characteristics of aluminum are supplemented by a judicious use of plastics. Alcoa engineers will gladly work with you on such designs. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

Hey! you forgot something...

1. This is the story of Dave Robeson, and how he lost his shadow. Every time Dave started his turret lathe, his shadow was in the way. "Go ahead," it said," try to turn that crankshaft down to within a ten-thousandth of an inch. Just try it!" So Dave would try. But every now and then he slipped up—and another piece landed in the scrap heap.

2. One day the foreman had a hunch. He stood for several minutes and watched Dave work. Then he called the superintendent and said, "This guy is working in his own shadow. It's a wonder to me his spoilage is as low as it is!"



3. Dave has lost his shadow. His spoilage is down and his spirits are up! Once the trouble was diagnosed, the electrician simply moved a couple of light fixtures and killed that shadow. Next day, Dave's experiences helped correct similar "bottle-necks" all over the plant.

MEMO TO WAR PLANTS. Little things like shadows, glare, or the gloom caused by dirt and grease on lighting fixtures *are* retarding production, increasing spoilage. A G. E. Lighting Advisor will gladly help, *but* you can easily make your own check-up tomorrow. *Don't waste light.* Remember that G. E. Research has been working continuously for over 50 years . . . to make General Electric lamps stay brighter longer.

MADE TO STAY BRIGHTER LONGER

THE BEST INVESTMENT IN THE WORLD IS IN THIS COUNTRY'S FUTURE...BUY WAR BONDS

G-E MAZDA LAMPS

GENERAL ELECTRIC

Hear the General Electric radio programs: "The G-E All-Girl Orchestra," Sunday 10 p. m. EWT, NBC; "The World Today" news every weekday, 6:45 p. m. EWT, CBS.

Some suggestions on soap for today's textile needs

1. **Waterproofing.** High titer soaps are making an important contribution to the waterproofing of fabrics. You'll find that the FLINT Soap you use for fulling and wool after-scouring can help you with your waterproofing operation, too. FLINT, you know, comes in chip and powder form. It's a tallow base soap with high titer pre-proved by careful laboratory tests before you buy it.

2. **Mildew Prevention.** Here's another operation where FLINT fits in. And, naturally, the stability and consistent high performance we build into every barrel or bag of FLINT Soap will be reflected in the quality of your product, whether in Mildew Proofing or in any one of the ways FLINT is now serving you.

3. **Nylon Scouring** is big business these days. Consider any one of these three Armour Soaps for your Nylon Scouring operation: CERTIFIED, TEXSCOUR, RE-NU. CERTIFIED is a vegetable fatty acid base soap of medium low titer, and it comes in flakes or solid form. TEXSCOUR is a red oil base soap of low titer, available in flakes. RE-NU is a thrifty jelly soap. All three . . . like all the other Armour Industrial Soaps . . . must meet exacting specifications, must pass strict pilot plant tests to prove their quality.

Whatever the process, there's an Armour Soap for it. That's because we make 12 different textile soaps with different bases and in various forms. That variety lets you hand-pick the Armour Soap that'll do the best job for you.

Sometimes we're delayed

on shipments of Armour Textile Soaps to you. We just can't produce all the soap that's ordered all the time these days. We're grateful for your patience -- and understanding.

Armour and Company Industrial Soap Division

1355 WEST 31ST STREET, CHICAGO 9, ILLINOIS

Monel equipment spans two war periods

... serves in World War I and World War II

JOSEPH BLACK & SONS COMPANY

MANUFACTURERS OF MEN'S HOSE

York, Pennsylvania

December 21, 1942

The International Nickel Company, Inc.
67 Wall Street
New York, N. Y.

Gentlemen:

We have received your letter, dated December 17, in reference to our Monel Metal Smith Drum Dye machines.

We are pleased to advise you we have a number of these machines that were installed 20 to 25 years ago still in service.

We have a dye house that we feel is second to none, which is equipped with Smith, Drum equipment.

Very truly yours,

JOSEPH BLACK & SONS COMPANY

E. J. FITZGERALD
GENERAL MANAGER.

EJF:et

PHOENIX HOSIERY COMPANY

CHICAGO

PHOENIX

MILWAUKEE

NEW YORK

SAN FRANCISCO

Dec 22 1942

RECEIVED
DEC 24 1942

Mr C J Bianowicz
The International Nickel Co, Inc
67 Wall St
New York City

Dear Mr Bianowicz:

In reply to your letter of December 17 we areglad to inform you that the Smith Drum Monel hosiery dyeing machines installed at the time we constructed our new dye house in 1921, are still giving highly satisfactory service.

Yours very truly,
PHOENIX HOSIERY COMPANY
F D MacIver
Production Manager

FDM:ET

We have loaned Uncle Sam some of our typewriters for the duration. Please excuse the brevity of this letter.

Twenty years... twenty-five years, and longer...of steady trouble-free service is not unusual for Monel textile equipment.

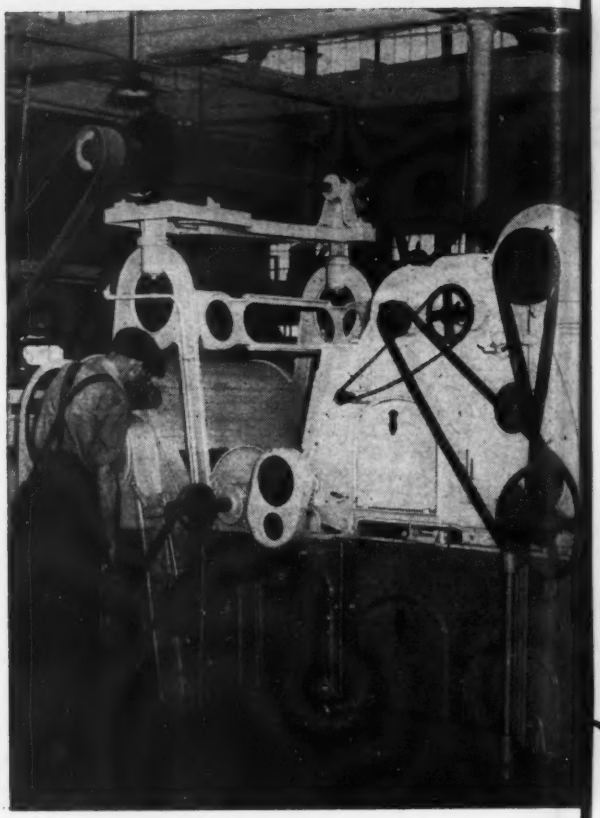
The letters reproduced here are but two of many affirming this fact.

The proved durability of Monel is especially important now, when repair parts are so difficult to get.

Down time is cut to a minimum; peak production schedules are maintained where Monel equipment is used.

Today, the entire output of this durable, corrosion-resistant metal is reserved for direct war uses. With peace, Monel will again be available for those who demand the best in textile equipment.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK 5, N. Y.



TOMORROW belongs to men with vision

Today, "Three Dimensional Seeing" is playing an active role in the drama of wartime production. By painting machinery in light-reflecting colors and the working areas in colors that contrast with the dangerous moving part of the machine and the material being processed, war plants are helping workers see more quickly and accurately.

For tomorrow, Du Pont continues to study this subject of color and vision. We visualize "Three Dimensional Seeing" giving factories a degree of efficiency and safety never before possible. We see a better manufacturing environment—more comfortable and pleasant working conditions—a more efficient, happier worker, stimulated by cheerful and bright surroundings. Color and Light to more closely simulate the fine qualities of daylight will make peacetime plants a better place to work in. Surely, these are goals worth planning for.

Supplies of paint raw materials are limited. It is becoming increasingly difficult to supply all the paint for "Three Dimensional Seeing" because of the tremendous demands from war plants. More paint, too, is being used on the implements of war they manufacture.

We're sure you'll understand if you can't get all the paint you want when you want it.

E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.

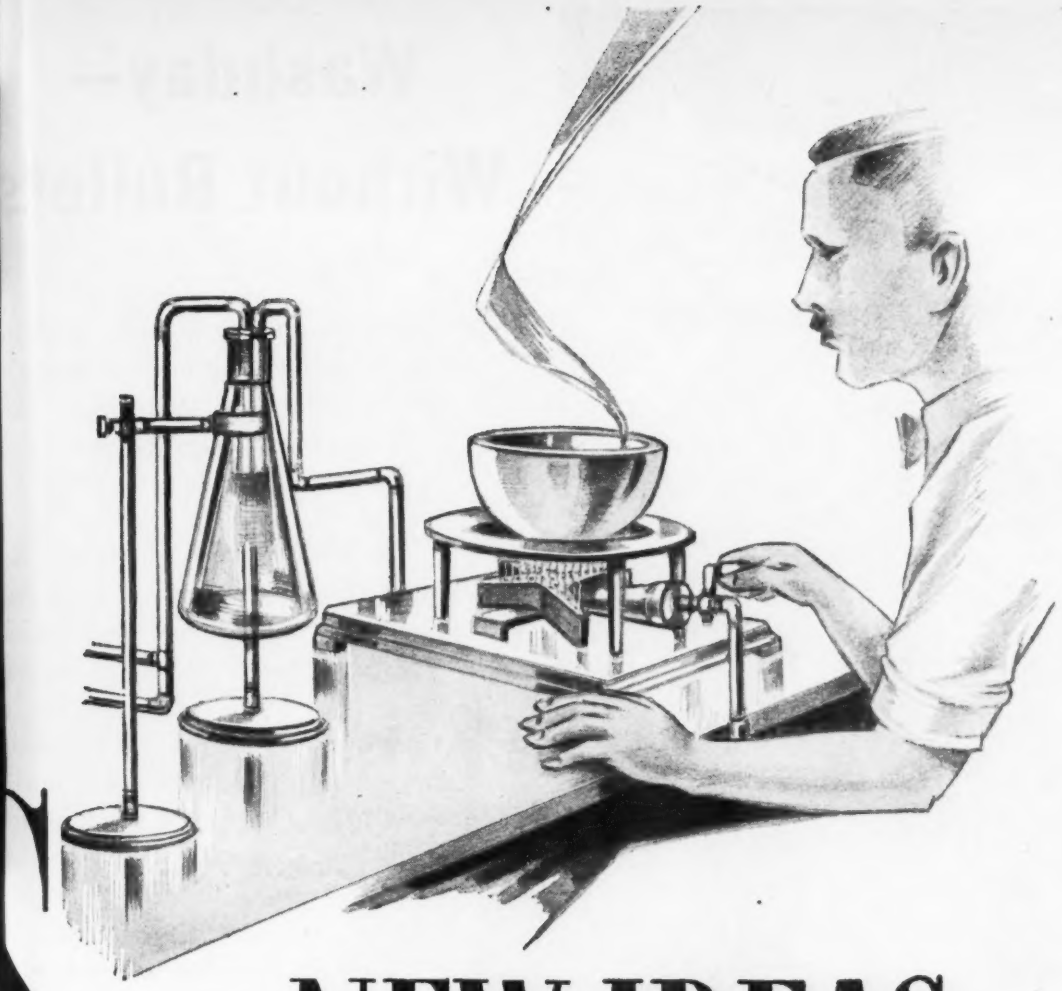
DU PONT
REG. U. S. PAT. OFF.

BACK THE ATTACK
...BUY WAR BONDS

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

THREE DIMENSIONAL SEEING

DU PONT PAINTS FOR MAINTENANCE AND MODERNIZATION



Some NEW IDEAS *are Cooking!*

In laboratories all over the country new ideas are stewing which will provide textile manufacturers with better equipment after the war. Some of them are cooking at Formica.

New materials and new methods of handling them in production will make available better loom box linings, separator blades, inspection table tops, knitting machine platforms, linings for factory truck bodies.

There will be less idle time for equipment because of shutting down for maintenance. It will produce more hours without attention.

Just now Formica's efforts are directed 100 per cent at the war. But get in touch with us on V-Day. Our engineers will have some interesting things to tell you.

ARMY E NAVY

FORMICA

THE FORMICA INSULATION COMPANY

4668 Spring Grove Avenue **Cincinnati, Ohio**

Washday— Without Bullets

When the enemy is near, washday means hanging your underwear on the nearest bush to dry. But white underwear on green foliage makes a target —signals your position to enemy observers.

That's why soldiers' underwear and other white articles are now dyed olive drab, reducing visibility from the air. And Army specifications call for vat dyes.

Service men and women, war workers—all are learning that colors can be made to stand up even under severe conditions. Naturally they'll expect color fastness in their "civvies" tomorrow.

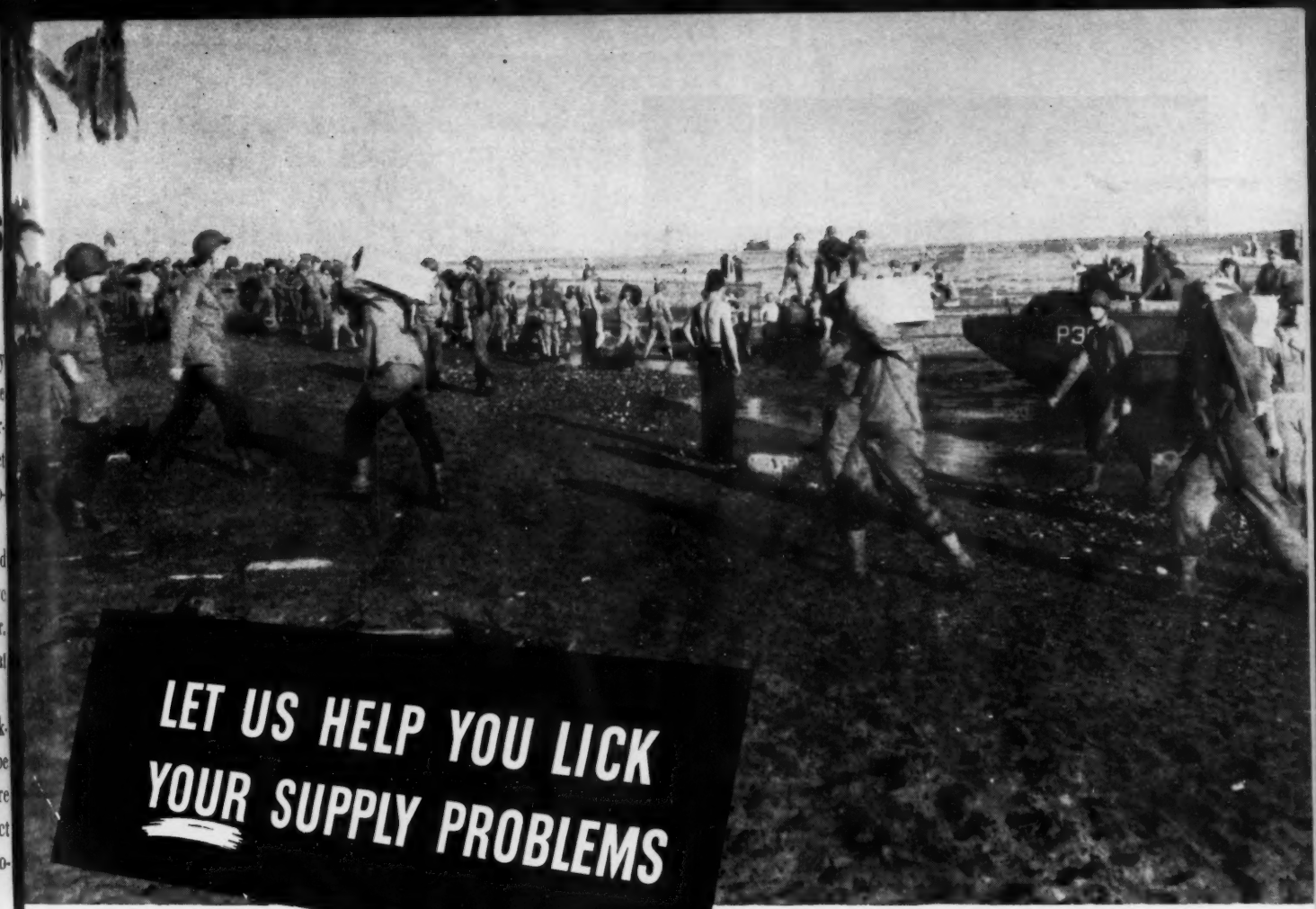
So use the best dyes available—vat dyes whenever Uncle Sam can spare them. That's the way to safeguard your present business while building for the increased markets of tomorrow.

E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyestuffs Division, Wilmington, Del.

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

BACK THE ATTACK—WITH WAR BONDS



LET US HELP YOU LICK YOUR SUPPLY PROBLEMS

Call us for General Purpose Steels

Our business is to help you keep war production moving, so if you need steel we'll get it to you in a hurry if at all possible—subject, of course, to priority restrictions. We can't always fill *all requests* because of material shortages, but a call to us has solved many a supply problem. If you need steel, steel products, machinery or equipment, try us. Write, phone or wire our nearest warehouse. You will get prompt, courteous attention.

We Welcome Inquiries On National Emergency Alloy Steels

These new steels have made it possible to meet many critical conditions imposed by the shortage of strategic alloys. They have given satisfactory results—in fact, have sometimes performed even better than the steels previously used.

We'll gladly assist you in determining the grades best suited to your needs. Get in touch with our nearest warehouse.

Get Extra Service From Your Equipment

Do you find equipment wearing out in areas subject to great abrasion or corrosion—while the rest of the equipment is still in good shape? You can prevent this premature breaking-down of equipment—save time, money and metal—by depositing a tough, wear-resisting surface over such areas with Bergstrom Hard Surfacing Electrodes.

These electrodes are easy to use. Applied in any position. AC or DC, with freedom from porosity. Freedom from scale eliminates brushing and chipping.

Write for Free Information

We will send you full information, including an outline of the purposes of each of the six types of electrodes available.

UNITED STATES STEEL SUPPLY COMPANY

USS

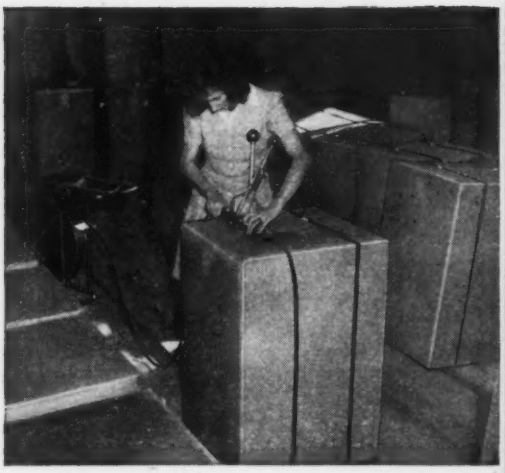
STEELS

SERVICE

Send for a FREE copy of our new Stock List and Reference Book—just off the press.

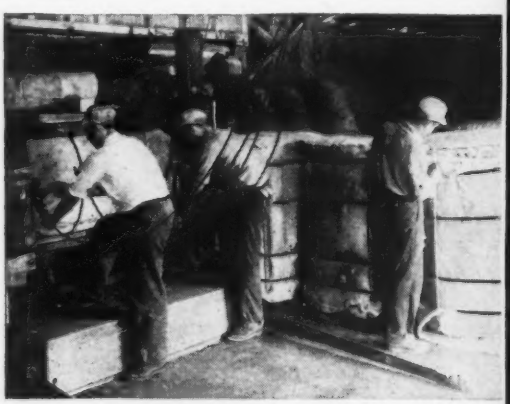
CHICAGO (90),	1319 Wabansia Ave., P. O. Box MM	Teletype CG. 605	BRUnswick 2000
BALTIMORE (3),	Bush & Wicomico Sts., P. O. Box 2036	Teletype BA. 183	GILmore 3100
BOSTON (34),	176 Lincoln St., Allston, P. O. Box 42	Teletype BRTN. 10	STAdium 9400
CLEVELAND (14),	1394 E. 39th St.,	Teletype CV. 153	HEnderson 5750
MILWAUKEE (1),	4027 West Scott St., P. O. Box 2045	Teletype MI. 587	Mitchell 7500
NEWARK (1), N.J.,	Foot of Bessemer St., P. O. Box 479	Teletype NK. 74	Bigelow 3-5920
		REctor 2-6560 ·	BErgen 3-1614
PITTSBURGH (12),	1281 Reedsdale St., N. S.	Teletype PG. 475	CEdar 7780
ST. LOUIS (3),	21st & Gratiot Sts.,	Teletype SL. 384	MAin 5235
TWIN CITY,	2545 University Ave., St. Paul (4), Minn.	Teletype STP. 154	NEstor 2821

UNITED STATES STEEL



"BOUND TO GET THERE"
WITH
Acme Steelstrap

Textiles . . . in Acme Steel banded bales, cartons and other packs are found on every fighting front. And the thousands of shipments moving from mills to finishing plants to industry and mercantile establishments are assured of "Bound to Get There" arrival . . . with Acme Bale Ties (for bales) and Acme Steelstrap (for cartons, cases, etc.). Complying with all Federal Strapping Specifications . . . these Acme reinforcements applied with Acme tools are helping the textile industry meet demands for adequate protection of textiles to the rapidly expanding needs of the armed services, other Governmental agencies and industry.



Used for baling, Acme Bale Ties and Steelstrap make possible the compressed type of pack which permits utilization of maximum shipping and storage capacities.

ACME STEEL COMPANY

General Offices: 2838 Archer Ave., Chicago, Illinois
Atlanta, 603 Stewart Ave. S.W. • Boston, 146 Summer Street
New York, 103 Park Ave. • Philadelphia, 201 Lafayette Bldg.

ACME STEEL CO.
CHICAGO

You name the Speed-Control Problem

chances are
Lewellen has the answer

1. For increasing the efficiency of your war production machines by the addition of Lewellen Variable-Speed Control.

2. For applying this famous Speed Control as an integral part of your post-war machines.

★

Look to the pioneer in speed-control engineering

★ The problems of modern, highly-efficient speed control require the skill of specialists. The experience of this organization—pioneers in speed control—is available to you for the solution of your speed-control problems.

Today, Lewellen Variable-Speed Transmissions, Variable-Speed Motor Pulleys and Automatic Controls serve industry the country over. Lewellen engineers are constantly finding ways to adapt new applications of variable-speed control to fixed-speed machines and to hundreds of machines using inefficient speed-control methods.

We invite you to use this specialized engineering service to increase the efficiency of your war production machines—to modernize your post-war machines by including Lewellen Variable-Speed Control as an integral part. Tell us your problem!

LEWELLEN MANUFACTURING CO., COLUMBUS, INDIANA

LEWELLEN Variable Speed { TRANSMISSIONS / MOTOR PULLEYS

This stainless steel silk and rayon dye beck is washed and rinsed at regular intervals. Result: No war-time "maintenance blues" in this mill.

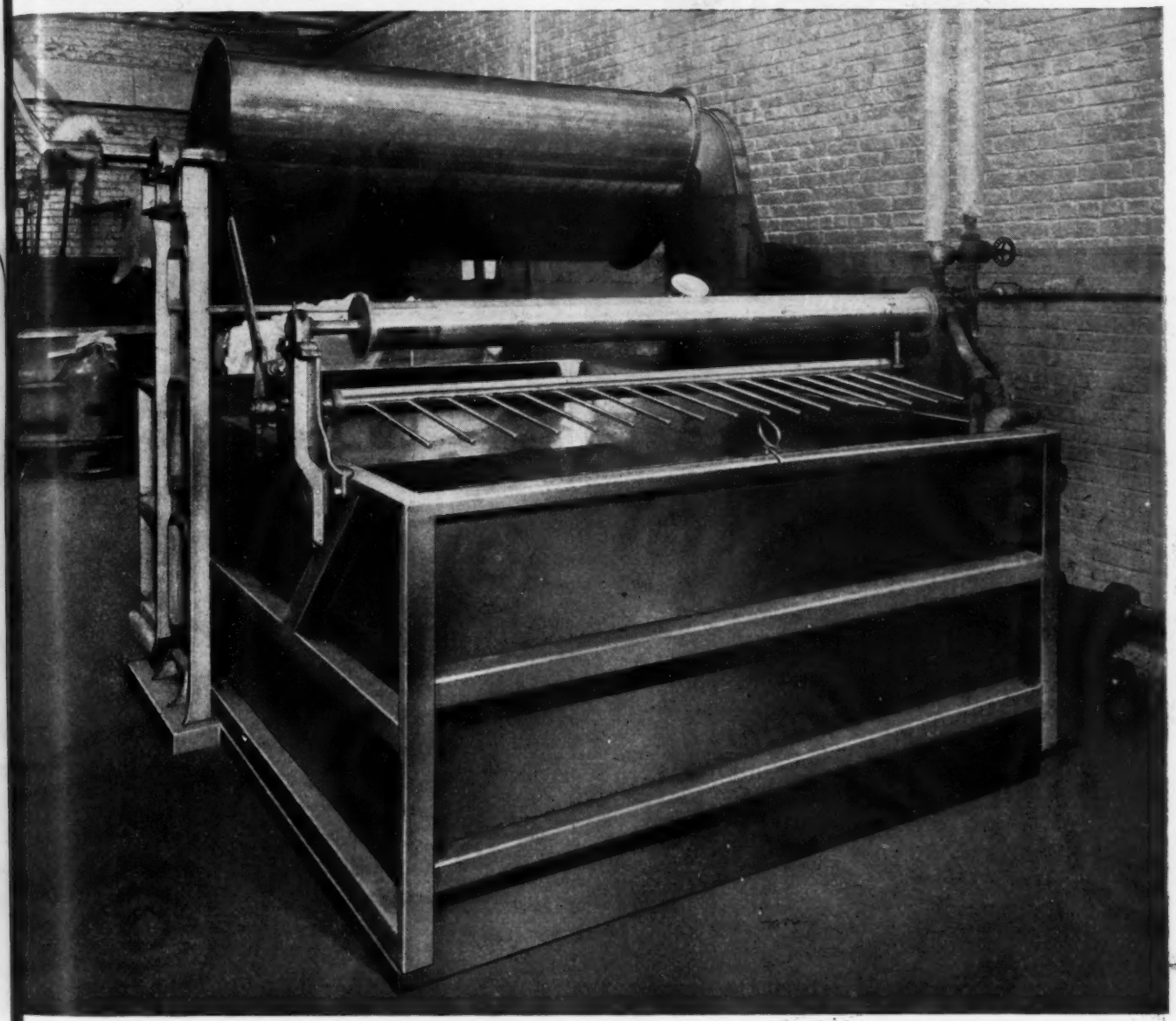


PHOTO COURTESY RIGGS AND LOMBARD

What is a "V-DAY" PLAN?

First, a "V-Day" plan is *all-out* textile production for victory; second, an outline of the new conditions you will be likely to face when peace comes.

Right now, textile men know their biggest job is to keep production machinery in top running order. This means an organized maintenance program and the fixing of responsibility for regular inspections. Stainless steel equipment, for example, should be kept free of lint and other deposits. A thorough rinse is all that is needed.

The second big task is to plan for post-war production. Many textile manufacturers are planning to train new men; many are keeping tab on the kinds of products that show the most profit. And they are planning a buying program *now* to replace worn, obsolete or inefficient equipment after the war.

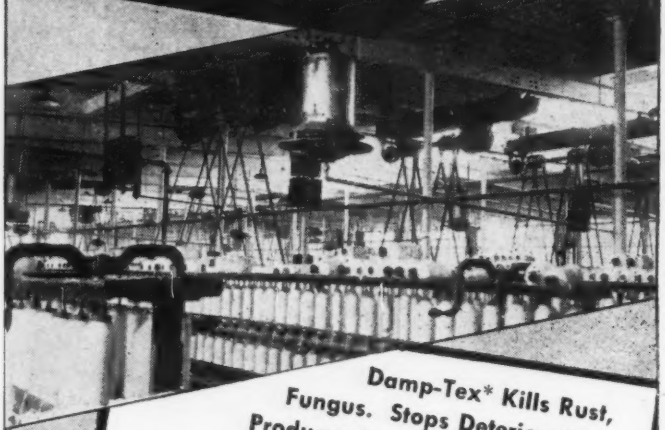
Much of this post-war equipment can advantageously be made of ARMCO Stainless Steel. Dyeing and fulling machines, bleaching equipment and drying machines are a few examples. Keep this rustless war-proved metal in mind when "V-Day" comes. For information about ARMCO Stainless, just write to The American Rolling Mill Company, 2821 Curtis Street, Middletown, Ohio, U. S. A.

STAINLESS ARMCO STEEL

THE AMERICAN ROLLING MILL COMPANY

PAINT PROTECT BEAUTIFY WALLS AND EQUIPMENT WHILE THEY'RE WET

Get Dry Surface Results, Including Quick Drying



Damp-Tex* Kills Rust, Fungus. Stops Deterioration. Produces Porcelain-Like Finish.

1. Damp-Tex Enamel sticks to any wet surface. Helps force out moisture. Then dries into a tough waterproof film.
2. Contains no flavor tainting odor.
3. Resists oxidation, corrosive gases. Will not crack, blister, check or peel.
4. One coat covers. One gallon covers 450 square feet of wood or metal surface, 360 square feet of cement, brick, or porous surface, wet or dry.
5. Dries in a few hours. Comes in white and colors.
6. Can be washed repeatedly. See no-risk offer below.

*The Damp-Tex System of Painting

SEND FOR FREE LITERATURE AND NO-RISK TRIAL OFFER

For complete details about Damp-Tex and our offer to furnish all materials at our risk for your first Damp-Tex paint job send for folder I.

DAMP-TEX The Enamel Made Expressly for Wet Surfaces

STEELCOTE MFG. CO., SAINT LOUIS, MO.

1935 1936 1937

Textile Dewatering in 194-?

WHILE the war has limited the number of Suprex Extractors for the textile mills . . it has NOT limited the number of applications for centrifugal force.

Instead, the demands of wartime industry have been a severe and constant challenge to the Tolhurst Research Staff. In meeting these demands, this group of chemists, physicists and engineers have gained valuable knowledge and experience that will be reflected in even finer extractors when we return to peacetime manufacturing.

In the meantime, take the best possible care of your present extracting equipment . . . and call in the Tolhurst service man if he is needed.

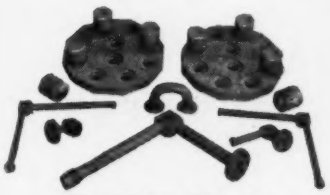
ARMY E NAVY

Tolhurst CENTRIFUGALS

DIVISION OF AMERICAN MACHINE AND METALS, INC.

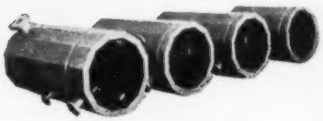
EAST MOLINE, ILLINOIS

Porous Carbon Diffuser

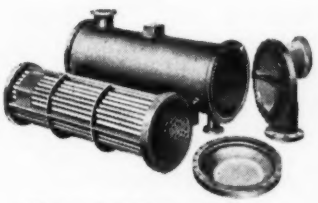


Pipe, Fittings, Bubble Caps and Trays

Headers for heat exchanger



Sections of segmental type reaction tower



Tube and shell heat exchange unit

47' high all-carbon electrostatic precipitator

For Continuous and Reliable Service

NATIONAL AND KARBATE CARBON AND GRAPHITE PRODUCTS
TRADE-MARK TRADE-MARK

are extremely versatile and readily adapted to the construction of equipment of conventional design as well as special equipment of new design.

Outstanding performance and economies, along with simplification of design, are made possible by the following unique and advantageous combination of physical and chemical properties offered by these materials.

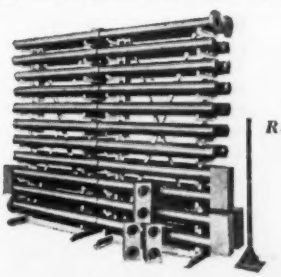
Resistance to severe thermal shock ⁄ No deformation at high temperatures ⁄ Not wet by molten metals – no sticking ⁄ Mechanical strength maintained at high temperatures ⁄ No reaction with most acids, alkalies and solvents — no contamination ⁄ High rate of heat transfer (Graphite and graphite base "Karbate" products) ⁄ Low rate of heat transfer (Carbon and carbon base "Karbate" products) ⁄ Low thermal expansion ⁄ Good electrical conductivity ⁄ Self-lubricating ⁄ Available in impervious grades ⁄ Available in highly permeable (porous carbon and graphite) grades ⁄ Easily machined and fabricated.

Practically any design can be machined or fabricated from available stock in the form of beams, blocks, slabs, brick, plates, round and rectangular rods, tubes and cylinders, pipe, fittings, valves, tower sections and tower accessories.

Special shapes or forms can be molded or extruded when quantity justifies.

The illustrations show only a few of the many diversified applications of these products.

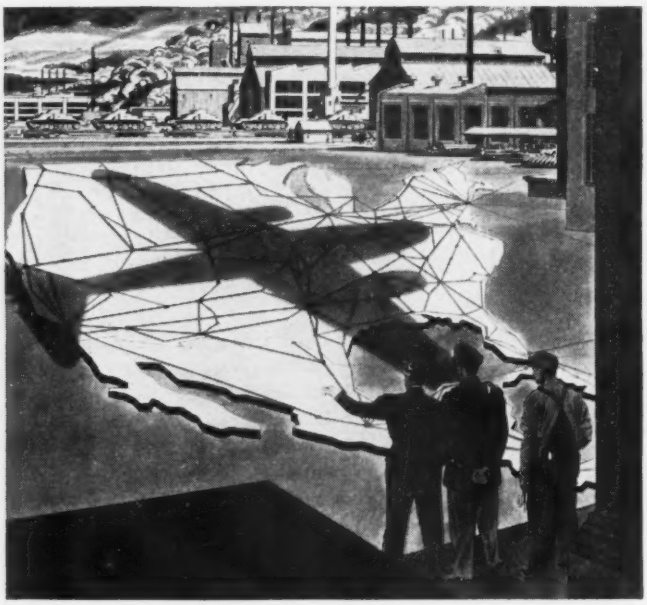
Write for descriptive literature



Return bend cooling coil

NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation
UCC
CARBON PRODUCTS DIVISION, CLEVELAND, OHIO
General Offices: 30 East 42nd St., New York, N. Y.
Branch Sales Offices: New York · Pittsburgh · Chicago · St. Louis · San Francisco

Get it Fast!
specify
AIR EXPRESS



IF you want your orders shipped *fastest way*, be sure to specify "ship AIR EXPRESS"—because general instructions such as "urgent" and "rush" may be misinterpreted by the shipper.

And it's especially important to specify AIR EXPRESS if your shipment is vital to a war job, because it saves something like 75% of the hours and days consumed over the next fastest means of shipping. This 3-mile-a-minute service is available direct to more than 350 U.S. cities and to scores of foreign countries.

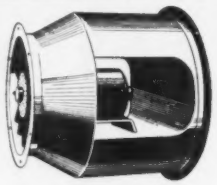
AIR EXPRESS RATES REDUCED

As a result of the great volume of Air Express traffic created by wartime demands and the increased efficiency developed to satisfy these demands... Air Express rates within the United States have been substantially reduced, in some instances as much as 12½%, depending on the weight of the shipment and the distance it moves. Consequently, shippers nationwide are now saving an average of 10½% on air cargo costs.

NOTE TO SHIPPERS: *Ship Early*—as soon as shipment is ready—to assure fastest delivery. *Pack Compactly*—to conserve valuable space. **ASK** for our new 1943-44 CALENDAR-BLOTTER. Write Dept. PR-11, Railway Express Agency, 230 Park Avenue, New York 17, N. Y.

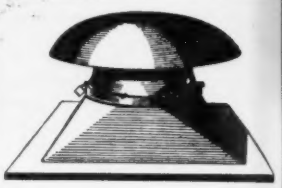
Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION
Representing the AIRLINES of the United States

4 ANSWERS TO VENTILATING PROBLEMS



1 HEAT AND VAPOR EXHAUST SYSTEMS

DeBothezat Bifurcators *install right in the duct.* For handling corrosive or high temperature fumes and gases. Motor isolated from fumes in chamber open at both ends. Sizes 18 in. to 4 ft.

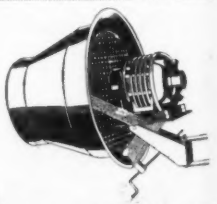


2 ROOF VENTILATORS

Assure positive ventilation *regardless* of temperature, humidity and wind velocity. Hinged top gives easy access to motor, fan and shutter. Light-proof; ready for blackout. Sizes: 21", 27", 36".

3 GENERAL EXHAUST SYSTEMS

DeBothezat offers a complete series of volume and pressure, axial-flow fans. Non-overloading power characteristic. Guaranteed performance ratings based on wind tunnel tests. Direct drives. Sizes from 18 in. through 10 ft.



4 FOR BLOWING LINT

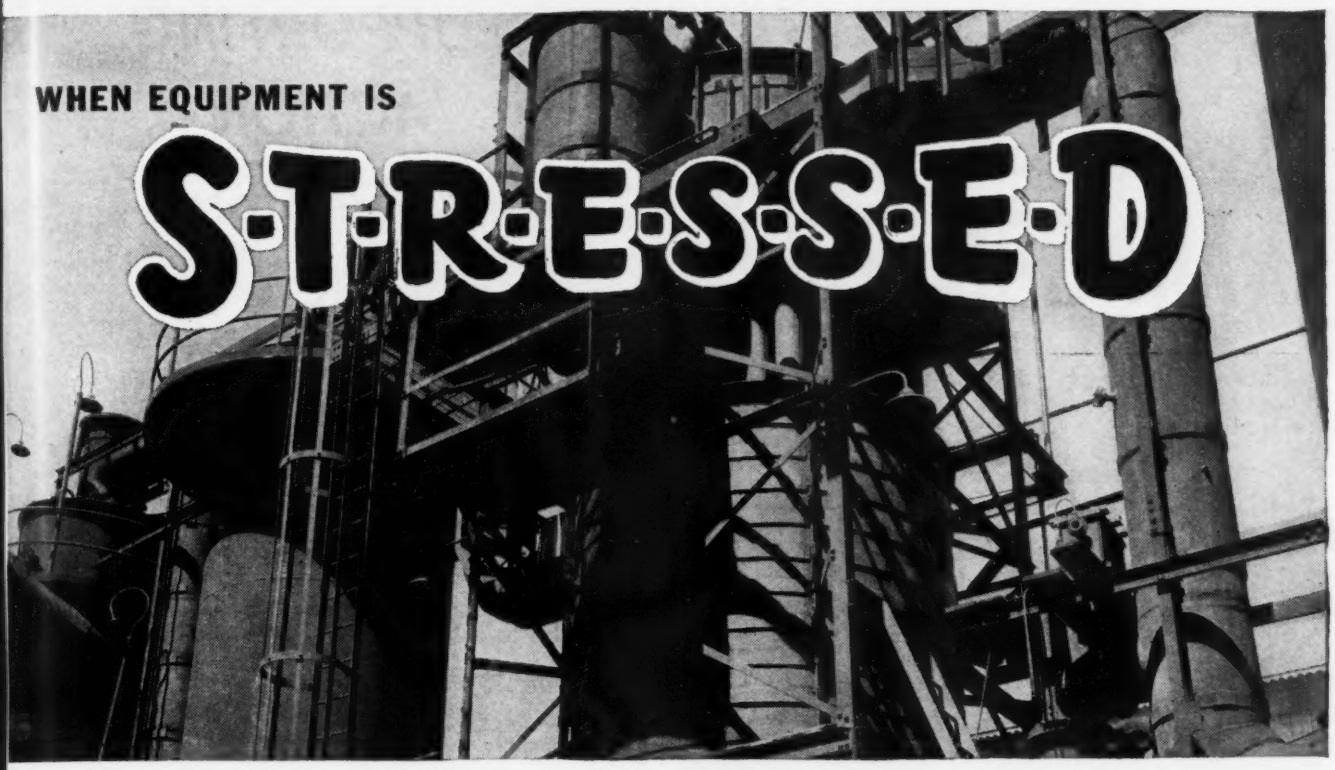
"HY-V" Air Jet combines high-efficiency, axial-flow fan with conversion nozzle for blowing a column of air. Arranged for column or floor mounting. "Air Jet" can be pointed in any direction.

Literature on all DeBothezat Ventilating Equipment is available on request.

De Bothezat

VENTILATING EQUIPMENT

Division of American Machine and Metals, Inc.
East Moline, Illinois



WHEN EQUIPMENT IS

S-T-R-E-S-S-E-D

AMERICA'S process industries are racing the hands of the clock, speeding the production of vital materiel. Acid handling equipment must stay *on the job.* And in many instances Tellurium Lead is helping to keep it there.

* * *

One service in which Tellurium Lead has been used to advantage is where equipment lining or piping is subjected to stress.

In certain cases of this kind Tellurium Lead has been found to stand up longer than other corrosion-resistant materials.

This longer life results, among other causes, from Tellurium Lead's ability to *work-harden.* Physical stress actually toughens this metal, increases its tensile strength, and makes it more fracture resistant than before.

The practical advantages of this capacity to self-strengthen are obvious. When a Tellurium Lead lining is turned over the top of a tank, or when a Tellurium Lead pipe line is bent or flanged, the metal tends to become stronger rather than weaker at the point where it is worked.

In the same way, operating stresses, such as stretching, bending or pressure, have a tendency to toughen Tellurium Lead—give it added strength *where strength is needed.*

* * *

Another frequent requirement of acid handling equipment is resistance to vibration. The resultant fatigue stresses, acting in combination with corrosion, are more disastrous than either factor alone.

To meet this condition Tellurium Lead not only has the acid corrosion resistance for which lead is noted but, under vibration tests, it exhibits a 60% greater endurance limit than lead without the tellurium addition.

* * *

Undoubtedly, still another factor in Tellurium Lead's resistance to corrosion under severe conditions of heat and stress is its generally finer, more uniform grain structure—shown in the accompanying photomicrographs. The surface of Tellurium Lead sheet and pipe is smoother—there is less possibility of pitting and local corrosion.

* * *

Tellurium Lead of our manufacture is time-tested St. Joe chemical lead alloyed with a small quantity of tellurium. It is available in sheet or pipe form, or fabricated in coils for heating and cooling purposes.

For further information address the nearest Company branch listed below.

USERS REPORT:

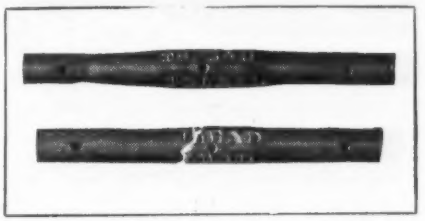
"We use Tellurium Lead regularly in our steam jet mixer heads as we find it has greatly improved resistance to crystalline fracture under conditions of mechanical stress."

• • •

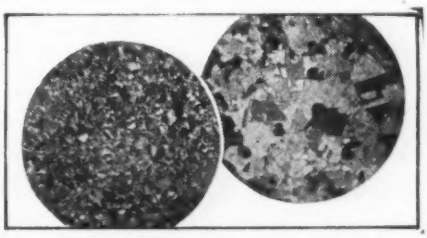
"Tellurium Lead is not only easy to flange but the flanges stand up a good deal better — they seem to actually become stronger at the turn-over point."

• • •

"We have been using Tellurium Lead in steam injector pipes for acid service and find it stands up well. It has the distinct advantage of giving the added rigidity and resistance to deformation needed under the conditions present."



Strengthens under Stress: These pipes of Tellurium Lead (top) and lead without tellurium (bottom) were stamped with their respective names and pulled out at equal rates in a tensile testing machine. Note how the Tellurium Lead was toughened by the stamping, how it work-hardened and developed strength, whereas the lead without tellurium was weakened—and fractured.



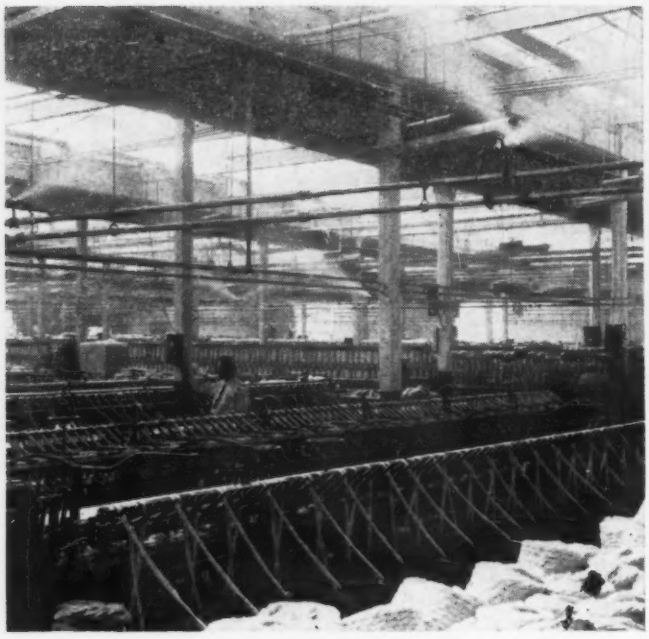
Finer Grain Structure: Photomicrographs of Tellurium Lead (left) and ordinary lead (right), showing the generally finer, more uniform grain structure brought about by the addition of tellurium. Another significant point: In laboratory tests extruded strips of Tellurium Lead, annealed at 150°C for six months, showed no grain enlargement. Metallurgists agree that freedom from grain growth means less danger of rapid corrosion at elevated temperatures.

TELLURIUM LEAD

NATIONAL LEAD COMPANY—New York, Baltimore, Buffalo, Chicago, Cleveland, Cincinnati, St. Louis, National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co. of Penna., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis; Master Metals, Inc., Cleveland; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

AROUND-THE-CLOCK

AIR CONTROL



CONTROL OF THE AIR in a textile mill means adequate, accurately regulated humidification, compensation for increased heat generation and induced ventilation. It means the elimination of static electricity, dust, fly and heat . . . enemies of machine efficiency. Only with adequate, carefully controlled humidification can machines maintain their full rated output.

Is your humidification system adequate? Is your equipment up to date and properly regulated? Do you have sufficient units and control stations to win CONTROL OF THE AIR in your mill? A few simple changes and replacements may be all that are needed to put your mill *back in the thick of the fight.* Make an immediate CHECK-UP!

American Moistening Co.,
Providence, Rhode Island.
Atlanta, Boston, Charlotte.

Amco

HUMIDIFICATION

Speeds Production

SUPPORTING ACTION Tells the Story!

★

Superior air power . . . control of the seas . . . hard-hitting, well-trained ground troops, these forces combined make for successful allied invasions. However, any one is helpless without the "supporting action" of the other two.

In a like manner, the best spinning and twisting equipment in existence will not produce successful work without the "supporting action" of a superior Ring Traveler.

Dary Ring Travelers are "superior" and are designed to supply the right "supporting action" to the spinning or twisting job you are now doing. Here are 8 reasons why—

1. **Every Dary Traveler is of guaranteed weight, temper and stock.**
2. **Specially drawn stock is used exclusively in their manufacture.**
3. **Only the latest approved methods plus especially designed tools are used in making superior Dary Travelers.**
4. **For over 4 decades skilled workmen have been responsible for turning out "better" Dary Travelers.**
5. **Dary Travelers are always accurately finished.**
6. **Special methods assure proper and uniform hardening.**
7. **Detailed inspection and rigid tests are "musts" in the Dary process.**
8. **Dary travelers are unequalled for resistance to wear.**

★

THE

DARY

RING TRAVELER CO.

TAUNTON,

MASS.

SOUTHERN REPRESENTATIVES

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JOHN H. O'NEILL, Box 720, Atlanta, Ga.
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Manufacturers of

The Reiner line of textile equipment. For 40 years it has represented the highest standards of quality and performance.

•

Full Fashioned Hosiery Machines

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Auto Heelers

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Tricot Machines

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High Speed Warping Machines
(Full width and sectional)

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Magazine Creels

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Jack Creels

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Thread Tensions
(Counterbalanced & Disc)

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Kay Loom Machines

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Raschel Machines

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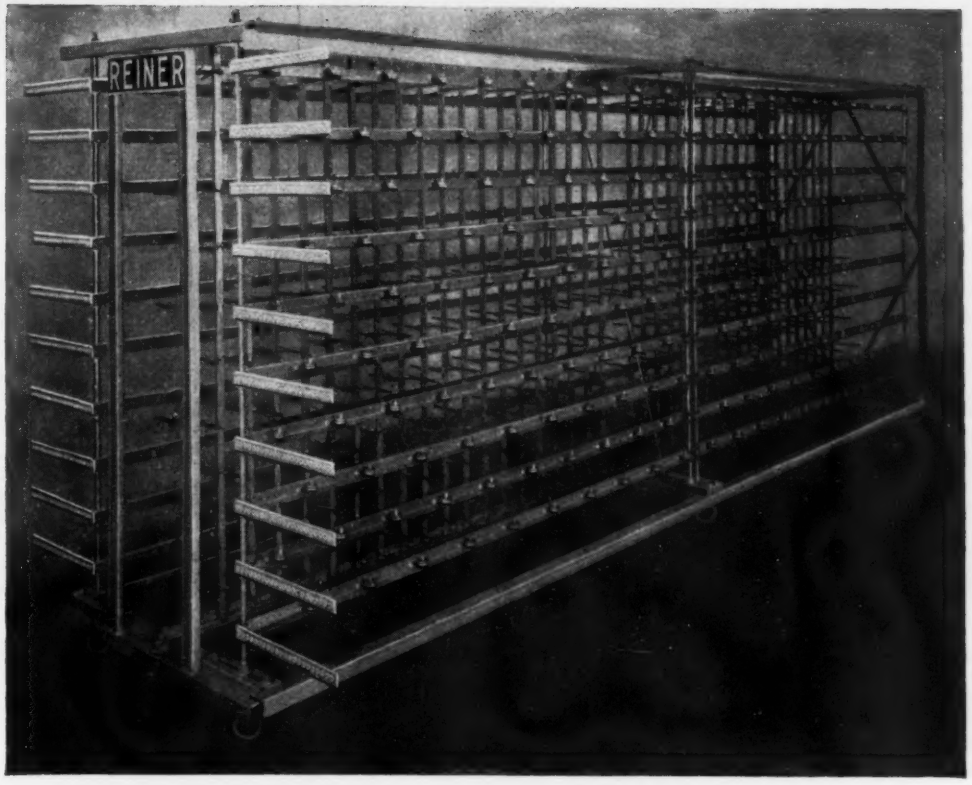
Automatic Embroidery Machines

•

Automatic Bobbin-Winding Machines

We carry an ample reserve supply of replacement parts for all REINER equipment now in textile mill operation.



JACK CREEL

400 End—About 16 ft. long by 5 ft. wide

CREELS BUILT IN SECTIONS AND IN ANY LENGTH

This small unit allows drawoff over end for cotton, woolen, worsted and rayons from either paper or wooden cones (8.25 cone pitch) or spools.

The Jack Creel is built 10 cones high staggered. It is equipped with heavy duty spindles, special cone holders, chrome plated Disc Tensions, porcelain eyelets in the front frame and with or without electrical stop motion. Mounted on casters, the Jack Creel is easily movable.

We are in a position to build warpers and creels subject to priority rating. Write for more complete information.

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REINER
INCORPORATED
WEEHAWKEN, NEW JERSEY

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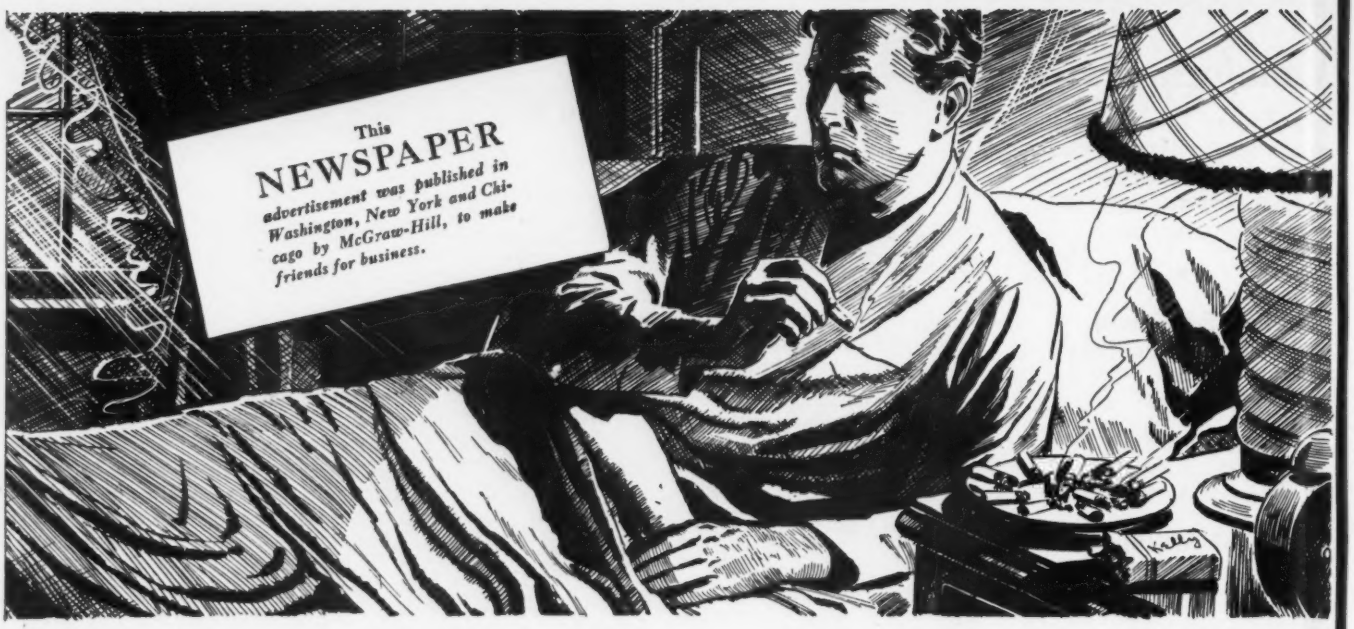
This
NEWSPAPER
advertisement was published in Washington, New York and Chicago by McGraw-Hill, to make friends for business.

Have you ever been out of a job?

What you can do

The best way to insure good jobs and better living is to create an environment favorable to continuous industrial progress.

The best way to insure healthy industrial progress is through a nation-wide understanding of the fact that we live better through doing more work in less time.

Nation-wide understanding of that fact will result in laws that encourage industrial progress.

Nation-wide understanding always will be a will-o-the-wisp, unless each business man does his share of: (1) Understanding his own responsibilities in maintaining industrial progress; (2) Explaining the relation between *good* business and good living to his employees and neighbors.

The newspaper advertisement reprinted here is McGraw-Hill's share in the job of explaining the source of good living. It has appeared in Washington, New York and Chicago, as well as in all McGraw-Hill publications. It is available, for use over your own company signature, in your plant city. A mat, six-column size for newspaper reproduction, will be sent to you upon request. Booklet reprints are also supplied at cost ($10.00 per thousand).

James H. McGraw, Jr.

President

McGraw-Hill Publishing Company, Inc.

IF you have ever been out of a job, and if you had a wife, children and slender resources at the time, then the fattest paycheck will never quite obscure the memory of the days and nights you lived with fear.

Some of that fear lingers in every man's mind, for all have suffered in some degree.

► That's why you hear the words "postwar planning" so often. Americans are determined that, one way or another, they are going to keep our thousands of factories going after the war, so that there will never again be a vast army of unemployed.

As usual, in a democracy, there are two entirely different ideas as to how to make 56 million jobs grow after the war, where only 46 million existed before.

Both kinds of people, who hold these different ideas, sincerely want to make the postwar world a better place for you to live in. They have complicated arguments, backed by lots of figures.

But when you trim all the arguments and figures down, you find that one side believes in DIVIDING jobs to make them go round, and the other side believes in MULTIPLYING jobs so there will be greater opportunity for all.

We believe in the MULTIPLYING plan for making postwar jobs and ask you to believe in it too.

Look back over our history. What made us great? Was it rich soil? Africa's is as rich. Was it

[FREE MATS: If you would like to publish this message over your own company name, or distribute it in handy booklet form, write or wire: Research Dept., McGraw-Hill Publishing Co., Inc., 330 West 42nd St., New York (18), N.Y.]

Have you ever been out of a job? (cont'd)

natural resources? China has them in abundance.

NO, the greatness and the good living of America is the direct product of her genius for doing more work in less time.

Invention is the source of improvement, and *improvement* is the multiplier of jobs . . . when products are improved in service or style, or lowered in price, new customers are attracted and new jobs created.

That's why it is true that good living has its source in industrial progress.

When industrial progress is interrupted, we have a depression, and there is less good living.

When (through courageous investment in new and better products) industrial progress is resumed, we go on to even higher levels of good living.

► If every able-bodied person in America is to have a job, then we must all understand the things that make good living possible, and we must all help *improve* the methods that have given so much good living to so many people already.

For businessmen, that means a constant search for improved methods and machines, a regular year-after-year investment in industrial progress. This means avoidance of such things as speculation in inventories that tend to create booms and depressions rather than consistent progress.

For every citizen, it means a constant search for the best ways and means to prevent and cure depressions.

Businessmen, alone, cannot prevent bad times. It's a job for *every* citizen. Every American can help just by knowing that good living comes from doing more work in less time. If you, and all other Americans, swing on to that fact, the laws that control our rate of industrial progress will be better designed to keep the improvement engine running.

That's where government really can be helpful in postwar planning.

It can encourage the "take a chance" spirit that is the basis of all progress. And it can improve the measures which prevent and cure depression. At present, our laws are not framed to encourage investment in new and better methods.

Many local, state and national taxes work out in favor of keeping an old machine, instead of buying a new one.

► There are tens of thousands of machines in the country that are over 20 years old. Even our shiny new war equipment is living 3 years in one, and will be old when the war is over.

Every machine should be regarded as obsolete as soon as it is installed and work started on a better one. In the long run, that is the best way to multiply jobs and create better living. Our laws should *encourage* the process, not *discourage* it.

New machines can only be bought with the profits created by old machines. The money that is laid aside by industry to develop and buy new machines is called "Seed Money." If laws take away too much of the Seed Money of business, that will prove disastrous. High taxes must be paid, but they should not destroy Seed Money, which is the only source of improvement.

That's why it's so important for everyone, no matter what his walk in life, to know this fundamental fact:

"Industrial Progress
is the Source of all Good Living."

THE McGRAW-HILL NETWORK
OF INDUSTRIAL COMMUNICATION

24 publications, which gather "war-news" from the "war-production-front" through a staff of more than 153 editors and 725 engineer-correspondents . . . More than 1,500,000 executives, designers, production men and distributors use the editorial and advertising pages of these magazines to exchange ideas on war-production problems.

McGRAW-HILL BOOKS

Publishers of technical, engineering and business books for colleges, schools, and for business and industrial use.

This advertisement is available in handy booklet form. (Less than 100 copies free. Larger quantities, $1.00 per 100; $10.00 per 1000.)

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Simplify and Solve Your Traveler Problems!

HEAT

WEIGHT

TWIST

STOCK

RING SIZE

LUBRICATION

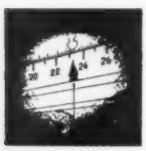
SPINDLE SPEED

Just use

"U. S."

RING TRAVELERS

THE NE-BOW
Prevents yarn ends flying out, provides ample headroom for threading—prevents binding on ring. N-o t e "bend inward" at t o p of horn.



HEAT CONTROL
for better metal—dominates "U. S." production! Carburizing and tempering ovens a r e electrically c o n - trolled through pyrometers—for better performance.

THE BEVEL EDGE
G r e a t pioneering "U. S." contribution to smooth spinning, twisting. Eliminating angular edges, gives uniformity of tension more even yarn, less "fly."

We know the things that affect Ring Travelers. That's why we make Ring Travelers that give the utmost life and service under all circumstances. We know the importance of proper design, proper balance, and lubrication. We know how wear on rings causes travelers to wobble and cant and delay the action of the yarn. We know the importance of metallurgical control in making bronze or steel give better service and last longer.

We know the vital importance of giving a uniformly good batch of Travelers. We know what it means to have yarn break and ends fall down, interrupting production.

If you are completely satisfied with the Travelers you now use, that's swell! But if you feel that there is a possibility that there could be produced a better Ring Traveler, more specifically suited to your work—that's where we come in. Glad to hear from you!

Sold under these trade names

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U.S. RING TRAVELER CO

AMOS M. BOWEN
President and Treasurer

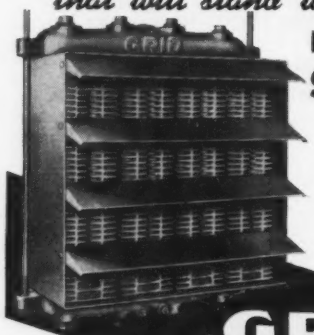
PROVIDENCE RHODE ISLAND

INSTALL A

UNIT HEATER

that will stand wear as long as the

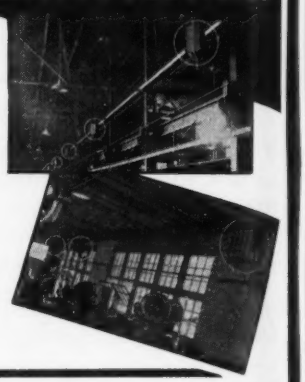
PIPES FURNISHING STEAM TO IT—



Cast Iron GRID Unit Heaters are built to last for years—to last longer than any other types of heating equipment. Their condensers are made in ONE piece—no soldered joints to become loose—no leaks—no breakdowns — no maintenance expense. Lint, dust or particles in the air cannot plug up GRID Unit Heaters.

GRID *Cast Iron* HEATING SECTIONS

ENGINEERED and tested to operate with either steam or hot hot water, up to 250 lbs. steam pressures, each "fin" heating sect'on is made of high test cast iron, to cooperate with the war effort. No electrolysis to cause corros'on—no heating failures. In the GRID Unit Heater no effort is spared to make it a high quality product, and we're constantly working on improvements to make it better. Catalog and capacity tables are yours upon request.



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That's the whole story of the Crabb reorganization! Quality unsurpassed. Let us SHOW YOU how we can help on your war contract.

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For the duration, our shops are principally engaged on war work.

We are doing our utmost, by extra effort and careful planning, to deliver essential supplies for repairs and maintenance.

MACHINE PARTS FOR REPAIRS AND MAINTENANCE
CARD CLOTHING
NAPPER CLOTHING
GARNETT WIRE
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LEATHER CONDENSER TAPES

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NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

Free! The Answers to Hundreds of Lubrication Problems!

CONTAINS SPECIFIC INFORMATION LIKE THIS:

Common causes of bearing failures and how to correct them.

How to groove bearings for high pressure lubrication.

How to determine temperatures of steam heated bearings.

When and how to lubricate anti-friction bearings.

The inside story on gear lubrication.

Quick reference of lubricants recommended for all types of machines.

Get a Copy to Help Teach New Workers!

Ask Anyone in Industry!

THE new Alemite Industrial Lubrication Manual is designed to help superintendents and maintenance men meet lubrication problems with accuracy. It is the result of years of on-the-ground experience by Alemite Lubrication engineers and is written so that it can be understood by the average man . . . which is vitally important these days when inexperienced help must be taught the tremendous importance of lubrication.

The manual contains diagrams, case histories and simple rules of lubrication that have proved successful wherever used. Write for your copy today. Ask for the "ALEMITE INDUSTRIAL LUBRICATION MANUAL." It's FREE.

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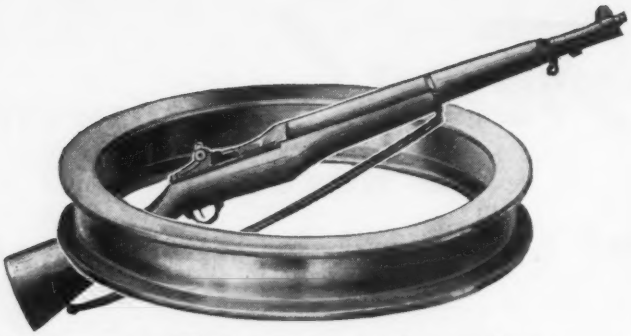


Finest Weapons for the Battle of PRODUCTION

Maximum production per machine — like maximum firepower per squad — can only come from the most modern equipment. DIAMOND FINISH special oil-lubricated Eadie rings have permitted entirely new high ranges of speed and production, while our standard styles offer the superb qualities of finish and long life that surround every spindle with ideal production conditions.

We make all types of holders

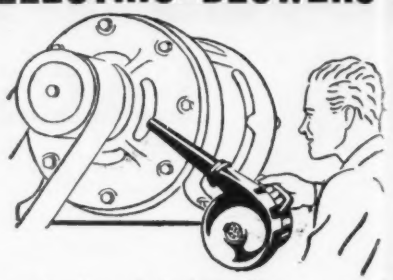
WHITINSVILLE (MASS.) SPINNING RING CO.

Makers of Spinning and Twister Rings since 1873

DIAMOND FINISH

TORNADO ELECTRIC BLOWERS

PROTECT MOTORS— REDUCE RE-PLACEMENTS— CUT POWER COSTS



PREVENT motor burnouts, overheating and shutdowns. Keep motors and machinery clean. Blow out dust, dirt, lint, chips, etc. with the powerful, portable TORNADO Electric Blower. Quickly pays for itself in cutting repair and replacement costs.

Write for details and FREE Trial Offer

BREUER ELECTRIC MFG. CO. 5086 Ravenswood Ave. CHICAGO, ILLINOIS

THOS. WOLSTENHOLME SONS & CO. INC.

3300 Frankford Avenue

Philadelphia, Pa.

Yarns for all purposes

French and English Spun Worsted
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Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton, worsted, wool, mohair, rayon — in all fashionable combinations and effects and in many original effects. Write for samples.

Sell Direct

Dana Warp Mills . . Westbrook, Maine

THE OLDEST AND LARGEST MANUFACTURER OF Ring Spinning and Twister Travelers

In the UNITED STATES
American • Hicks • Wilson

United States Standard Wentworth Double Duty and Gravity Travelers

MAKE STRONGER YARN

National-Etartaep Finish A New Chemical Treatment

Write Us

National Ring Traveler Company

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PHILIP C. WENTWORTH, Treas.
P.O. Box 1565, Providence, R. I. Charlotte, N. C.

MURDOCK Bobbin Holders

Two exclusive Features Affording Long Life:

1. Automatic-bobbin holders equipped with holding wings electrically hardened all the way through.

2. Holding wings held positively in position by skeleton washer—no sliding around.

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins.

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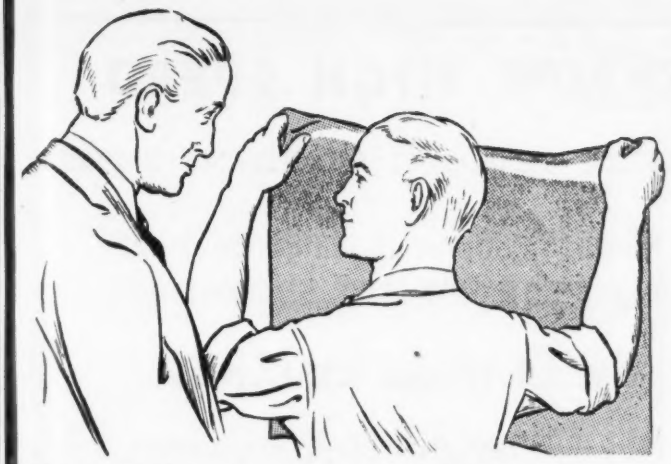

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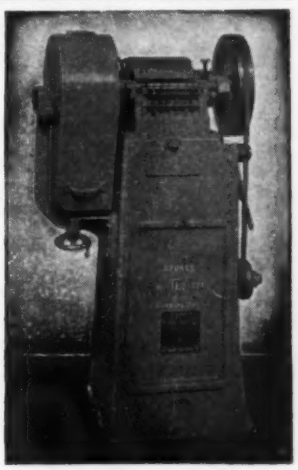

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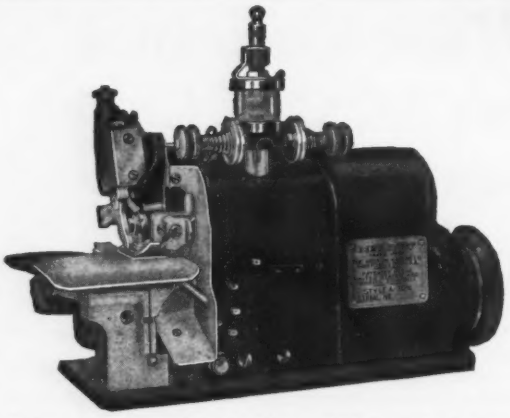

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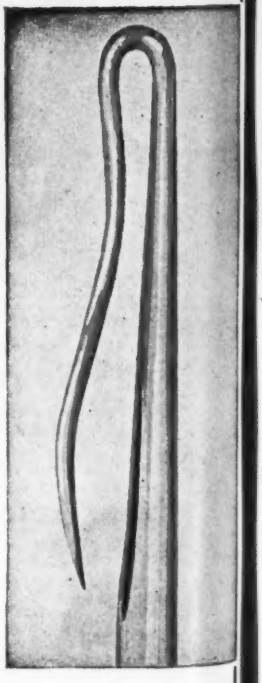

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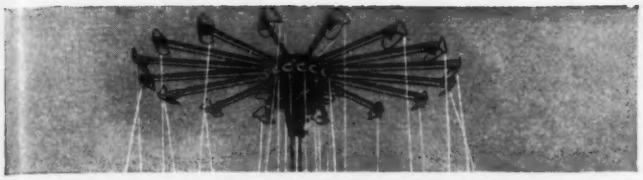

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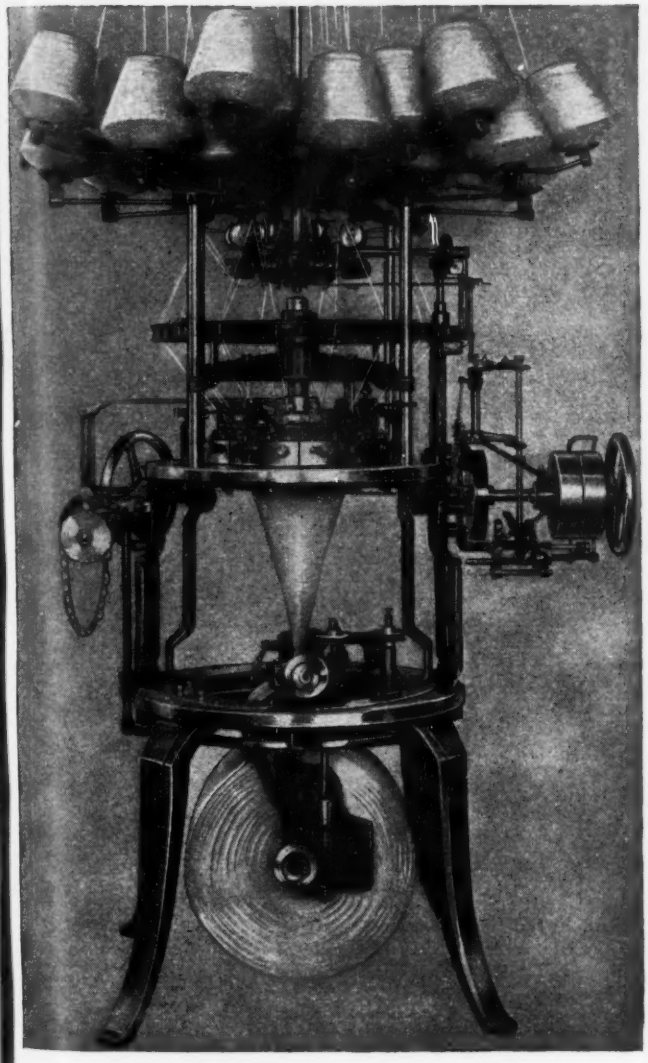

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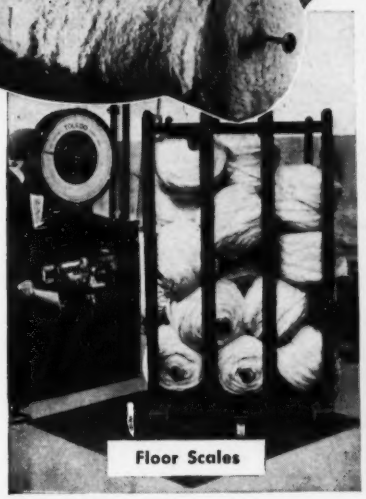

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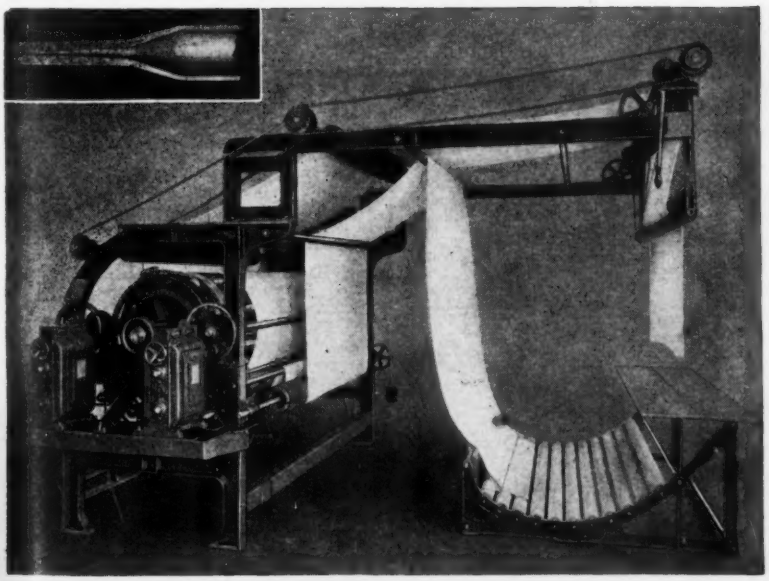

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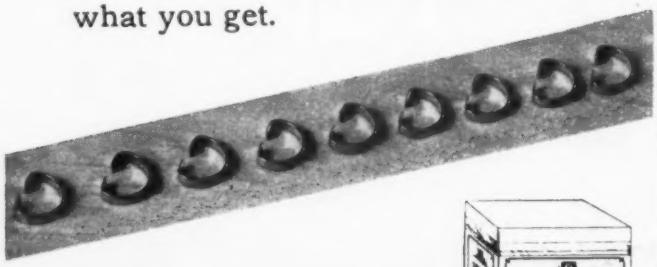

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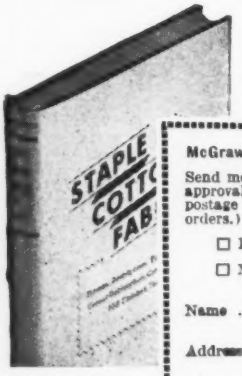

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EXPERIENCED MILL MANAGER with many years experience in plain and fancy constructions available on short notice. Desires personal interview. Qualified for position as manager, general superintendent or superintendent. PW-686 Textile World, 330 W. 42nd St., New York 18, N. Y.

WOOLEN MILL SUPERINTENDENT or Manager available. Now located in Ohio. 20 years experience on all classes of woolen woven fabrics. Have worked in large and small mills on men's and women's wear and blankets. Am 41 years of age, reliable and competent and desire a position with a mill that is not undermined with politics. PW-687, Textile World, 330 W. 42nd St., New York 18, N. Y.

INDUSTRIAL AND TIME STUDY ENGINEER with exceptional record Production and Cost Reduction in silk and rayon manufacture desires permanent connection with mill in Southern States or South America. Address PW-688, Textile World, 330 W. 42nd St., New York 18, N. Y.

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TEXTILE PRODUCTION MAN

Executive ability, good knowledge of business administration, desires position. Considered to be very capable technician and designer. 13 years experience of manufacturing all kinds of fancy woolen and worsted fabrics. Married. Draft status 3 A.

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Looking forward to the approaching Post-War Era, we desire to round out our sources of supply.

Leading COTTON YARN producers *desiring complete or partial exclusive sales representation* may prepare to place their account in capable hands.

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NYLON AND RAYON THROWSTER. Capable young manager-superintendent technical and practical mill experience on Nylon and Rayon throwing. Thoroughly familiar with all equipment and know how to handle labor. Am at present employed by large corporation but wish to make a change. Will consider position as an assistant to above and will go any where. Married—draft exempt. PW-689, Textile World, 330 W. 42nd St., New York 18, N. Y.

COTTON MILL SUPERINTENDENT wants position where unusual ability to get results is prime requisite. Now doing outstanding job in large mill. Good reason for change. Young man, textile education, excellent experience background. Reasonably draft proof. WMC release available. PW-690, Textile World, 330 W. 42nd St., New York 18, N. Y.

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WANTED BY ONE WHO KNOWS the exact spot where each item is most urgently needed. Any type yarns, natural or dyed, cotton, rayon, acetate. Cash. W-641, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE & HOSIERY EXPORTERS seeking new profitable markets (full development post-war) should communicate at once: W. B. O'Rourke & Company, Textile Agents, 32, Wicklow Street, Dublin, Eire.

WILL BUY OR LEASE
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For Combing Rayon Staple Fibre
Cash or terms and quick action

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WANTED
Complete Dye House, consisting of Dye Boxes, Finishing and Drying equipment.

BO-676, Textile World
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40 HEAVY DUTY 4 x 4 WORSTED LOOMS, 72" REED SPACE, FOR UPHOLSTERY FABRICS; EQUIPPED WITH BALL BEARINGS, MOTOR DRIVE; 550 VOLTS, 60 CYCLE, 3 PHASE.

ALSO, STAINLESS STEEL PACKAGE DYEING MACHINE 600 POUND CAPACITY.

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FOR SALE

32,000 Spindle Cotton Mill, tape driven spindles, with looms
33,000 Spindle Cotton Mill, with looms
32,000 Spindle Cotton Yarn Mill
100 C & K 48" Automatic Looms 4x1 Box, Belt Drive
60 C & K 42" Automatic Looms 4x1 Box, Belt Drive
12 Stafford 90" Looms, Motor Drive
20 Stafford 44" Looms, Automatic Shuttle Changing, Motor Drive
56 Stafford 50" Automatic Changing Looms, Motor Drive
22 Naismith Combers
3 Sliver Lap Machines
3 Ribbon Lap Machines
5 Saco-Lowell Intermediates 84 spindles, 9x4½
1 Platt Bros. 50" Picker Unit

FS-681, Textile World
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20-No. 50 Universal Winders

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Send samples and quantities for quick disposal.

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ANY QUANTITY OF
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Will pay spot cash.

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Automatic Blanket Looms 92" or Wider also 60" Garnet Breast

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MULES

2¾" Pitch Johnson and Bassett.

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THE DAY HAS ARRIVED!

Now, as never before, you need the service "MLC" can give you

THE time is HERE to plan for 1944—and beyond. Inevitably, the question of EQUIPMENT for textile mill production and maintenance arises . . . equipment and parts not only for replacement or renewal of war-worn machines but to establish new standards of more economical, efficient operation all through the mill, from power-plant up . . . NOW.

• In this connection, the ability of "MLC" quickly to supply you with dependable Used Equipment and Mill Supplies is of vital importance . . . as is also our experience in the rapid LIQUIDATION of such unwanted equipment as you may wish to convert rapidly into capital or to dispose of to make space for other equipment.

• *We suggest that you contact us at once and let us get to work with you on these phases of your over-all planning for the future.*

THE LONG-ANTICIPATED MOMENT has arrived. The Army no longer wants all the textiles it can possibly get—and no longer wants them the day before yesterday. It has stated bluntly that 1944 purchases of military fabrics will approximate 50% of the 1943 purchases.

That is a helpful type of statement. It enables the industry to start some over-all planning for 1944. Obviously, the percentage, too, is an over-all one. There undoubtedly will be types of textiles of which the Army will require 100% production for the duration. There will be others, the demand for which may fall well below 50% of the 1943 level. But at least, we have something to shoot at.

The first reaction to this announcement, among textile manufacturers, is one of relief. It means that it will now be possible to supply long pent-up civilian demands: to return in part to the servicing of regular customers. As lavish a buyer as the Army has been, it is still not in the class of a regular customer, over the years.

DOUGLAS WOOLF
Editor
TEXTILE WORLD - SEPT. 1943

PARTIAL LIST OF STOCK ITEMS

1—66" Voelker Double Bed Cloth Press

1—28 Stick Klauder Weldon Monel Lined Non-Hoist Skein Dyeing Machine, motor driven, with Aluminum Poles

Combers

2—Sets Whitin Model "C" Combers including:

2—Sliver Lappers 20 end derby back

2—Ribbon Lappers, 4 head

16—Combers, 8 head, 11¾" lap

1—500-lb. Bleaching & Dyeing Kier with Circulating Pump

1—36" Empire Copper Basket belt dr. Extractor

An Outstanding Value for Immediate Purchase

THESE SPINNERS HAVE JUST BEEN TAKEN OUT OF SERVICE

22—264 Sp. WHITIN Band Driven SPINNING FRAMES, 1¾" ring, 3" gauge, 8" cylinder, 7" traverse, 1" rolls, 15/16" whorl, with combination builders and hank clocks, metallic thread boards and separators, recently overhauled with new spindles, separators and roll coverings.

JUST TAKEN OUT OF SERVICE!

PARTIAL LIST OF STOCK ITEMS

1—48" Tolhurst Copper Basket Belt Driven Extractor

10—50" Draper Automatic Magazine Worsted Looms, 6 harness, with warp stopmotions, belt driven

1—142" 4 roll Mangle with 24 Copper dry cans, batcher, reeves drive, etc.

Twisters

3—80 spindle Hopedale Band Twister, 4½" Rings, 5½" Gauge, Belt Driven

3—110 sp. Hopedale 3" Ring Twister

1—66½" Parks & Woolson Single Shear

1—106" 2 Blade Schulze Double Shear

1—60 sp. Draper, Band driven, Twister, 2½" ring, 3½" gauge, arranged for motor drive—no motor

Dealers in Quality Used Mill Machinery and Mill Supplies for Cotton, Silk, Rayon, Wool, Bleaching, Dyeing, Finishing and Preparatory Equipment. Many other items are available for immediate delivery such as: Button Breakers, Doublers, Extractors, Folders, Looms, Printing Machines, etc. Also numerous Mill Supplies.

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

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DOMESTIC — TELEPHONE PEnnsylvania 6-8014 — EXPORT

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60" Bramwell Card Feed
20 x 60", 2 cyl. ball-bearing Hunter Garnetts, with waste saver and feed
C. & M. 48" Fearnaught Mixing Picker
Spencer Automatic 48" Oiler

Warping and Winding Machinery

Pin and Pinless Warpers, any size
#50 Universal Winders
#90 Universal Winders
#180 Universal, 8 x 8 Super Coners
L. & G. 40 spindle Cop or Butt Winders

Weaving Machinery

Royle 600 hook piano type Card Cutters
76" C. & K. 4 x 4 box, 25 harn. Looms
82" C. & K. 4 x 4 box, 25 harn. Looms
92" C. & K. 4 x 4 box, 25 harn. Looms
85" Knowles Automatic Looms
4 x 6" Wood Spools
4½ x 6" Wood Spools

Dyeing and Finishing Machinery

P. & W. 60" Brush, with steamer, 2 cyl.
C. & M. 78" Brush, with steamer, 2 cyl.
Kenyon 66" Chinchilla Mch.
Sargent Filling Yarn Conditioning Mch.
Windle Doubling and Folding Mch.
Dry Cans, set of 5, 48" wide, upright stands
A.T. & M. Co. 36" Extractor, underenath belt drive
A.T. & M. Co. 42" Extractor, underneath belt drive
Werner Vacuum Extractor, single pump
E. & H. 66" wide, Yard Folder
Woonsocket 82" D.A. Napper, 20 rolls
Gessner 72" S. A. Napper, 20 rolls
Gessner 66" Heavy duty, Jumbo type Press
Gessner 72" Century type Press
Voelker 82" Double Bed Press
P. & W. 66" Model A, 2 cyl. Shear
P. & W. 66" Model B, 2 cyl. Shear
C. & M. 66" 2 cyl. Shear
P. & W. 66" Plush Shear
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C. & M. 76" 2 burner Gas Singer
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1—Haskell Dawes 4 ply Rope Machine.

2—Haskell Dawes 12"x14" Two spindle Formers.

6—Haskell Dawes 8"x10" Two spindle Formers.

10—20 spindle Ball winders. 5" Gauge. Silver Gay makes.

4—12 spindle Ball winders. 8" Gauge. Franklin makes.

1—378 spindle Whitin quiller.

2—Foster make, 40 spindle Tube winders, 6" Tubes.

4—Luther Thread Dressers. 98 spindle spool take offs.

200—24 Carrier, Textile make #2 wire Braiders.

10—Flat Knitting machines, for making Camouflage Nets, Fringes, etc.; 36" width needle gauge.

8—90 and 100" Rachelle Knitting machines, for making Camouflage nettings.

120—16 carrier Textile and Round Tubular Braiding machines, for making Parachute Cords and wire for Government work.

750—Flat and round Braiding machines, for government work, of all types.

We will consider trading any of the above machines for yarns, various sizes, colors, etc.

4—16 carrier #4 Butt Braiding machines.

20—Universal Tube Winders.

WHAT DO YOU HAVE FOR SALE? SEND US YOUR LISTS.
ALL OF THE ABOVE EQUIPMENT IS LOCATED ON OUR FLOOR.

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25,000 Gal. Cap., 60 Ft. Tower.
35,000 Gal. Cap., 65 Ft. Tower.
40,000 Gal. Cap., 106 Ft. Tower.
50,000 Gal. Cap., 100 Ft. Tower.
50,000 Gal. Cap., 156 Ft. Tower.
60,000 Gal. Cap., 90 Ft. Tower.
65,000 Gal. Cap., 70 Ft. Tower.
100,000 Gal. Cap., 100 Ft. Tower.

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17—3000 Gal. & 6000 Gal. Cap.
6—12,000 & 18,000 Gal. Horizontal Oil Tanks.

AIR COMPRESSORS

17—368 Ft. to 1500 Ft. Cap., 10 to 100 lb. pressure.

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FOR PROMPT DELIVERY FROM OUR OWN STOCK:

2—Cotton Slashers complete with 7' single copper drum
3—72" Jigs—Wooden boxes
1—50" 3 bowl Silk Calender (Morrison Ball Bearing)
1—50" V.V. Button Breaker (19 Brass Rolls B.B.)
1—50" A. & G. Insulated Tenter Housing 56' with Airfin heater and B.B. blower
1—Eppenbach Colloid Mill
1—72" Scutcher
1—30' W. & J. Tenter 60"—Boland Dryer—Steamer—Batcher
1—60" Broadbent Extractor—Belt driven

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Triple Effect Zaremba Evaporator

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Yarn Winding and Spinning Machinery

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9—R. B. & F. 3 to 8 color print Machines 40" to 64" wide, complete.

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1—V.V. ball bearing Calendar, 50".

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1—18' x 60" Ager.
1—30' Steel Ager.

KETTLES
9—Textile Copper Steam Jacketed Color Kettles, tilting type, agitated, 30 to 100 gallons capacity.

DRYERS
3—National Loop Dryers, 28', 33', 65', 70' lg.
2—P & S Airley Dryers.
1—Phila. Dry Mach. Co. Hurricane Continuous Skein Dryer.
2—Frank Bailey Truck Dryers with extra trucks for skein & tube yarns.
1—P & S 36' Loop Dryer 90" poles. Rebuilt by National. Equipped with high speed booster fans, airfins.
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1—3-Roll Print Padder, dry tower with unit heater.

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5—Rodney-Hunt Fulling Mills, gear drive.
2—Single Line Fulling Mills, rubber rolls.

CAN DRYERS
100—Dry Cans, 50" to 108" face, 23" to 84" dia.

SCOURING & DYEING MACHINES
2—Haveg Dye, or Washing Machines, completely enclosed, 51" wide.
1—Sargent 3-Bowl Skein Scouring Machine.
10—Klauder-Weldon Skein Dye Machines.
1—Obermaier 400# Package Dyeing Machine.

NAPPERS
8—D & F. Woonsocket Nappers, 60" to 90".
2—Single Roll Nappers or Brushing Machines.

DYE JIGGS
1—Battery 4-Butterworth stainless steel lined Dye Jiggs, 45".
1—Battery 4-Morrison stainless steel lined Dye Jiggs, 50", tilting expanders.

TENTER FRAMES
1—W & J. 95' x 50" Swing Tenter Frame.

FLAT FOLDERS
4—E & H. Flat Folders, 42" to 60".

OPEN WASHERS
1—Continuous Full Width Washer, consisting of 3 sections, 4 nips each section, 66".
1—60" Continuous Boil-Off Machine, steel tanks.

ROPE SOAPERS
1—V.V. Continuous Square Formation Washer.

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3—P & W. Double Blade Shears, 66", with list saving device.
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BLEACHING
8—Bleaching 4-5 ton Kiers, vomit type.
1—5-ton Kier, circulating type.
2—Lincoln 2-roll Rope Squeeze rolls.

COMPLETE PACKAGE DYEING UNIT
Consisting of
4—Stainless Steel and 2 Cast Iron 400# Machines.
6—#102 Foster Coners.
1—#102 Foster Tuber.
1—Roto Tuber.
1—Vacuum Extractor.
1—Vacuum Dryer.
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And all accessories

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4—V.V. 50" & 55" Beamers.

DYE BECKS
10—Morrison & V.V. Dye Becks.

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3—V.V. & Tolhurst 60" rubber & copper basket Extractors.
1—Tolhurst 48" Underslung open top Extractor, copper basket.
10—V.V. Fletcher & Tolhurst, 40", 44", 48" Extractors, copper lined.
12—Tolhurst, American Laundry, Adams Troy & Bach copper lined Extractor 17", 20", 26", 28" & 32".

DECATORS
2—David Gessner & P & W 72" & 48" wide, complete with Nash Pumps.

WORSTED SPINNING FRAMES
24—Ring Spinning Frames, 160 spindles 8¼" pitch, 8" traverse, 1¾" ring, 4" front roll.

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4—Textile 50" 2-Roll Dye Padders.
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2—Textile 80" 2-Roll Mangles.
8—Butterworth & Morrison 2 & 3-Roll Quetches, 50", 60" & 72" wide.
5—Quetches, 2 & 3-roll, 36-72".

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1—Permutit Water Softener, 103" hg, 63# wd.
2—10 x 10 Vertical Softeners, zeolite.
2—Pressure Sand Filters, 8' dia x 20' lg, complete with pipe & valves.

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Skein Reeler, Universal Tubers, Gas Boiler, Scutchers, Expanders, Sewing Machines, Trucks, Generator Sets, Rubber Lined Tanks, Modine Heaters, Motors, Exhaust Fans, Pleaters, Mandrels Doctor Blades, Gears, Lathes, Portable Agitators, Accumulators, Wood Shells, etc.

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1—PALMER UNIT with 60" Blanket, 3 copper DRY CANS.
1—PERCH P&W 72" with Clock.
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1—MANGLE 44" Heavy Duty 2 rolls.
1—MANGLE 66" Heavy Duty 2 rolls.
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2—SHEARS, P&W 66" Single & Double Blade Units.
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1—SEWING MACHINE, Houston Rotary Type.
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1—TENTER FRAME 30' long X 60" wide, Clamp style.

MISCELLANEOUS:
Bristle Brushes, Rubber Rolls, Expander Rolls, Copper Slasher Cans 46" width.

ONLY A FEW OF THE MANY UNITS AVAILABLE. SEND FOR OUR COMPLETE CATALOG LIST YOUR SURPLUS EQUIPMENT WITH US.

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1 38" Padder, 2 rubber rolls.
1 Rodney Hunt Sample Fulling Mill.
6 S.L. 12x6 Slubbers, 68 spindles ea.
1 C&M Silk Folder 65", flat folds, 1—1¼ yd.
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84" WIDTH

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2—Examining table complete with clock, motor and winder.

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Bleaching Pressure Cookers

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BUTTERWORTH CALENDER
7 ROLLS—80" FACE

3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.

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The Searchlight Section—market place for used or surplus new equipment—"channels" this vital machinery to the production fronts through dealer ads—or your own.

Departmental Staff
TEXTILE WORLD
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FOR SALE

10—Saco-Lowell Individual Spoolers 40 & 48 Ends with Creels
1—6 Drum Multiple Spooler, 40 & 48 Ends, with Creel
2—Sargent Yarn Conditioning Machines, Motor Drive
1—Foster Doubler 80 spindles
3—Foster Nutaper Cone Winders—100 spindles, Model #30
30—Heavy Duty Looms 78" reed space 4x4 box, motor drive
1—Parks & Woolson 66" Single Shear
1—Gessner Double Acting Napper 66", 20 rolls
2—Rodney Hunt Fulling Mills
1—James Hunter Fulling Mill, No. 10
26—Universal Winders #50
2000—Sets Caps, Tubes and Spindles

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FOR SALE

Approx. 800 Ft., 12 inch "Alvey-Ferguson Co" slider belt intermediate conveyor, with ten drives, take ups & stands. All in excellent condition.

We also buy surplus equipment.

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FOR SALE
Lawrence 2" Vertical

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LIKE NEW
SNOW WHITE BLEACHERY, INC.
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COMPLETE RAYON WEAVING PLANT
260—Draper Automatic Looms, Modern Slashing, Warping, Winding, Auxiliary Equipment.

COMPLETE COTTON WEAVING PLANT
450—Automatic Looms, Stock Dyeing Equipment, Piece Goods Finishing Equipment.

COMPLETE SCREEN PRINTING AND FINISHING PLANT
12—Automatic Tables, Print Washing, Drying, Aging, Finishing Plant.

EXCELLENT TEXTILE EQUIPMENT READY FOR IMMEDIATE SHIPMENT

WEAVING

4—Draper Automatic Motor Driven Looms, 69" Reed Space.

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160—Scott & Williams Nye & Tredick Circular Ribbers, Range 10" 10 cut 8 feed to 23" 14 cut 12 feed.

SEWING

Union Special
25—52800
50—35300
11— 9900
3—15400

Union Buttons
10—Button Sewers
10—Button Sewers used as Tackers

Wilcox & Gibbs
5—Lock Stitch

Singers
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Metropolitan
4—192-5 elastic machines with elastic pullers.

SPECIAL

1—American 48" Copper Basket underslung Open Top Centrifugal Extractor, Self-Balancing Type on Springs, Equipped with Vertical A.C. Motor. Latest Type. Excellent Condition.

WATER SOFTENING AND FILTRATION EQUIPMENT

3—Permutit Water Softeners, 10' Diameter x 16' Long, with Interconnecting Piping, Valves, Meters and large Quantity of Zeolite.
1—Permutit Vertical Water Softeners, 3' Diameter, 6' High Complete with Zeolite and Fittings.
1—Permutit Type C, Electric Chemical Feeding Devices, Constant Feed.
1—Permutit Vertical Water Softener, 5' x 6' with Valves, Piping and Zeolite.
1—Hungerford & Terry Horizontal Steel Pressure Water Filters, 8' x 20', 8,000 Gallons Capacity, 5/8" Plate, equipped with Cross Piping, 8" Valves and all accessories.
1—Filter Everson 42" x 48".
1—Filter Permutit 6'6" x 6'.

SPECIAL

1—Battery of 4 Morrison Stainless Steel Dye Jiggs, 50" A.C. Motor Drive.

FINISHING

Beamer
1—Van Vlaanderen 50", Beaming and Rolling up Machine. Friction Drive.

Bleach House Equipment
2—8' x 9' Kiers.
2—10' Log Washers.
2—Bleach House Squeezers.

Boil Off
1—King & Gerber 54" Continuous Boil Off with Rubber Nip Rolls and Slat Conveyor.
1—Van Vlaanderen 3 Nip Continuous Open Soaper, 3 sets of Brass Nip Rollers, 60" face.

Calenders
1—Van Vlaanderen 3 Roll Finishing Calender, Wool Felt Bowls, Large Diameter.
3—Textile 50" 5 Bowl Calenders.
2—Textile 45" 3 Bowl Friction Calenders.

Can Dryers
1—set of 20 Cans Textile Copper Cans 23" diameter, 54" face, Vertical Stack.
1—set of 18 Cans, 23" x 45" face, Vertical Stack.
1—7 Can Butterworth Copper Cans, 23" diameter, 80" face.
1—Textile Can Drying and Rolling Up Machine, Copper Can 36" diameter, 50" face.

COLOR GRINDERS

1—Patterson 7' x 5'6" Silex Lined Pebble Mill, Gear on Head. Belted to 10 H.P., A.C. Motor.
1—Abbe 4' x 6' Porcelain Lined Pebble Mill, Texrope Drive for 5 H.P., A.C. Motor.
2—Patterson 4' x 5' Silex Lined Pebble Mills, Belted to 5 H.P. Motors.

Decaters
1—Parks & Woolson 50" Demi-Decater with Blanket, Nash Vacuum Pump and Motor.

Doublers
2—Parks & Woolson 54" Doubling and Reeling Machines.
1—Van Vlaanderen 60" Doubling and Winding Machine.

Dye Becks
1—Monel Metal Solid Tub Dye Beck, 5' with Monel Reels.
2—Stainless Steel Lined Sample Dye Becks.
1—Van Vlaanderen 4' Stainless Steel Lined Dye Beck.
1—Van Vlaanderen 19' Cypress Dye Beck.

Dye Jiggs
6—Textile Copper Lined Dye Jiggs 45" Face.

Dye Padder
1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll Motor Driven.

EMBOSSERS

1—King & Gerber 2 Roll Embosser, 54" wide, direct Motor Drive.

Extractors
1—American 48" Open Top Motor Driven Extractor, Copper Basket.
3—Hercules 60" Motor Driven Extractors, Copper Basket.

FILTER PRESSES

1—Sweetland No. 4 Pressure Filter with Stainless Steel Screens.
1—Smith & Vale, 32" x 32" 42 Plate Filter Press, Open Delivery, 1½" Cake.

Folders
1—Eastwood Gray Goods Folder, 60" Wide.
3—E & H Flat Folders, 45" to 60" Wide.

KETTLES

6—Copper Steam Jacketed Mixing Kettles, Equipped with Double Motion, Bronze Agitators, 70 to 350 Gallons Capacity.

Palmer
1—65" Van Vlaanderen Palmer Tenter Quetsch Unit, with Stainless Clips and Housing.

Printing
1—Werner 50" Single Color Print Machine.
1—Rice, Barton & Fales 7 Color 50" Print Machine.
2—Rice, Barton & Fales, 42" Print Machine, 8 and 11 color.

TANKS

2—Asbestos Insulated Round Steel Tanks, 6' Diameter x 6' Deep with open Steam Heating Pipe.
1—Steel Tank Open Top, Side Bottom Outlet, 9' Diameter x 4½' Deep.
7—8,000 Gallon Closed Steel Pressure Tanks, 5/8" Plate, 8' x 20' Long, Dished Ends, Riveted.
5—Rubber Covered Open Steel Tanks, 4' Wide, 3' Deep, 6' Long.

Tenter Frames
1—30' Windsor & Jerauld Open Tenter Frame with Steam Heating Coils.
1—60' Windsor & Jerauld Tenter Frame with Proctor & Schwartz Housing.

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EQUIPMENT COMPANY
40 WORTH STREET NEW YORK CITY
Purchase and Sale of Used Machinery
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INDEX TO ADVERTISERS

An * indicates additional data will be found in 1942 Textile World Yearbook and Catalog.

*Abbott Machine Co. 10
Aberfoyle Mfg. Co. 24
Abington Textile Mchy. Works 162
Acme Knitting Machine & Needle Co. 199
*Acme Steel Co. 182
Alemite Div. Stewart-Warner Corp. 193
*Allis-Chalmers Mfg. Co. 5
*Alloy Steel Products Co. Inc. 27
Aluminum Co. of America 174
American Crayon Co. 165
American Cyanamid & Chemical Corp. 57
*American Monorail Co. 12
*American Moistening Co. 188
American Photocopy Equipment Co. 169
American Rolling Mill Co., The 183
American Viscose Corp. 14
American Woolen Co. 199
*Aridye Corp. 22
*Arkansas Co., Inc. 171
Arlington Mills 170
Armour & Co. 176
Armstrong-Bray & Co. 202
*Armstrong Cork Co. 21
*Armstrong Machine Works 140
*Arnold-Hoffman & Co. Inc. Inside Back Cover
Atlantic Stainpruf Co. 166
*Atlas Electric Devices Co. 148
Atwood Machine Co. 103
Auto Ordnance Corp. 47

Bahnson Co., The 138
Bailey, Frank 170
*Baldwin-Duckworth Div. Chain Belt Co. 36
*Barber-Colman Co. 167
*Barnes Co., Henry K. 107
*Booth Co., Benjamin 195
Breuer Electric Mfg. Co. 194
*Brown Instrument Co., The 43
Buffalo Forge Co. 41
Bunting Brass & Bronze Co. 205
Burkart-Schier Chemical Co. 152
*Butterworth & Son Co., H. W. 129

*Caldwell Co., W. E. 205
Carbomatic Corp. 160
Carrier Corp. 55
*Carter Traveler Co., Div. of A. B. Carter, Inc. 204
Clinton Company 127
Colgate-Palmolive-Peet Co. 155
Cooper Co., Chas. 196
Crabb & Son, Wm. 193
*Crane Mfg. Co. 196

Dana Warp Mills 194
Darnell Corp., Ltd. 134
*Dary Ring Traveler Co., The 188
*Davis & Furber Machine Co. 193
Dayton Rubber Mfg. Co. 23
*DeBothezat Ventilating Equip. Div. American Machine & Metals, Inc. 186
Devoe & Raynolds Co., Inc. 202
Diamond Alkali Co. Standard Silicate Div. 198
*Dinsmore Mfg. Co. 198
Dispersions Process, Inc. 141
Dixie Mercerizing Co. 111
Dodenhoff Co., W. D. 168
*Dommerich & Co., L. F. 18
Dow Chemical Co., The 157
*Draper Corporation 3
*Du Pont de Nemours & Co., E. I. Dyestuffs Division 180
Finishes Division 178
*Economy Baler Co. 202
Electro Metallurgical Co. 172
*Fairbanks, Morse & Co. 133
Falls Yarn Mills 140
*Fidelity Machine Co. 162
*Finnell System, Inc. 169
Formica Insulation Co., The 179
Foster Machine Co. 32
Foxboro Co., The 56
Franklin Research Co. 165
Freeland Spool & Bobbin Corp. 130
Freydberg Bros.-Strauss Inc. 137
*Fuller Brush Co., The 113

Gates Rubber Co., The 40
*General Electric Co. 45
General Electric (Lamp Dept.) 175
General Electric Co. (Refrigeration Dept.) 145
General Electronic Industries, Division of Auto-Ordnance Corporation 47
*Gessner Co., David 203
Gilmer Co., L. H. 17
Globe Dye Works 201
Goodyear Tire & Rubber Co. 9
Graton & Knight Co. 34, 35
*Graver Tank & Mfg. Co., Inc. 48
Gulf Oil Corp. 46

*H & B American Mach. Co. 28
Heineman Corp., Oscar 154
Henry, Andrew K. 138
Horn Co., A. C. 139
Houghton & Co., E. F. 15
*Howard Bros. Mfg. Co. 26
*Hunt Machine Co., Rodney 192
*Hunter Machine Co., James 149

Industrial Gear Mfg. Co. 169
Industrial Rayon Corp. 16
*Ingersoll-Rand 51
International Correspondence Schools 37
International Nickel Co., Inc. 177
*Ives Co., L. T. 198

Johnson & Son, Inc., S. C. 144

Kaumagraph Co. 109
*Kenyon & Son, D. R. 200

Lane & Bros., Inc., W. T. 202
*Laurel Soap Mfg. Co., Inc. 200
Lewellen Mfg. Co. 182
Loper Co., Ralph E. 192

Maguire & Co., J. P. 135
Merrow Machine Co., The 196
Metallizing Engineering Co., Inc. 128
Mill Devices Co., Div. of A. B. Carter, Inc. 204
Monomac Spinning Co. 170
Montgomery Co. 166
*Murdock & Geb Co. 194
Murray Mfg. Co., D. J. 192

National Carbon Co., Inc., Carbon Sales Div. 185
National Lead Co. 187
National Oil Products Co. 163
*National Ring Traveler Co. 194
National Starch Products, Inc. 153
New Departure Div. of General Motors 13
New England Butt Co. 198
N. Y. & N. J. Lubricant Co. 195
Nonquit Mills 170
*Norma-Hoffmann Bearings Corp. 42

Oakite Products, Inc. 201
*Onyx Oil & Chemical Co. 161

Pabst Sales Co. 156
Parks-Cramer Co. 150
Penick & Ford, Ltd. 200
Pennsylvania Salt Mfg. Co. 159
Pequot Mills 195
*Perkins & Son, Inc., B. F. 173
Philadelphia Quartz Co. 200
*Pittsburgh Plate Glass Co., Columbia Chemical Division 25
Prince-Smith & Stells Ltd. 143
*Proctor & Schwartz, Inc. 151

Quaker Chemical Products Corp. 131

Railway Express Agency, Air Express Div. 186
Red Ray Mfg. Co. 166
Refinite Corp., The 136
Reiner Inc., Robt. 189
*Reliance Electric & Eng'g Co. 49
*Rhoads & Sons, J. E. 61
*Riggs & Lombard Inc. 165
Rome Soap & Mfg. Co. 200
Royce Chemical Co. 58
Ryerson & Son, Inc., Joseph T. Inside Front Cover

*Saco-Lowell Shops 8
*Sarco Co., Inc. 33
*Scholler Bros., Inc. 199
*Scott Co., Henry L. 168
Sinclair Refining Co. (Inc.) 4
Sirrine & Co., J. E. 170
*Solvay Sales Corp. 158
*Sonoco Products Co. 105
Southworth Mach. Co., The 168
Standard Fabricators 146
Standard Pressed Steel Co. 44
*Standard Soap Co. of Camden 164
Star Electric Motor Co. 29
Steelcote Mfg. Co. 184
Sterling Ring Traveler Co. 205
*Stokes Machine Co., F. J. 195
*Sturtevant Co., B. F. 30, 31
Sun Oil Co. 7

Talcott, Inc., James 169
Taylor Instrument Cos. 52
Tennant Co., G. H. 132
*Terrell Machine Co., Inc., The 160
Texas Co. 62
Textile Banking Co. 147
Textile Machine Works 53, 54
*Thomas & Skinner Steel Products Co. 136
*Toledo Scale Co. 203
*Tolhurst Centrifugals Div. 184
Tomkins Bros. Co. 198
*Torrington Co., The 19, 20

*U. S. Ring Traveler Co. 192
U. S. Rubber Co. 141
U. S. Steel Supply Co. 181
U. S. Textile Machine Co. 140
Union Carbide & Carbon Corp. 172, 185
*Universal Winding Co. 38, 39, 114
*Veeder-Root Inc. Back Cover
Victor Paper Mills Co. 202

Wallerstein Co., Inc. 201
Wayne Mfg. Co. 142
*Westinghouse Electric & Mfg. Co. 11
*Whitinsville Spinning Ring Co. 194
Whitman Co., Inc., William 170
Wildman Mfg. Co. 197
Wolstenholme Sons & Co., Inc., Thos. 194
Wood's Sons Co., T. B. 50

PROFESSIONAL SERVICES

Lancaster, Allwine & Rommel 206
Loper Co., Ralph E. 192
Sirrine & Co., J. E. 170

SEARCHLIGHT SECTION

Classified Advertising

BUSINESS OPPORTUNITIES 206
EMPLOYMENT SERVICE
Raymond Service, Inc., Charles P. 206
POSITIONS VACANT 206
POSITIONS WANTED 206
WANTED TO PURCHASE 206
USED AND SURPLUS EQUIPMENT 206-213
Ames Bag Co. 208, 210
American Sales Co. 210
Bay State Textile Co. 210
Brandon Woolen Mills Co. 206
Consolidated Products Co., Inc. 208, 209
French, C. M. 210
Gaines Textile Mchy. Co. 208
Jafee Cotton Products Mfg. Co. Inc. 210
Iron & Steel Products Inc. 210
Lorraine Fibre Mills Inc. 210
Machinery Liquidating Company 207
McCaffery & Son, Inc., L. J. 210
McCloskey, Inc., John J. 208
McDowell, Norman M. 210
Republic Textile Equipment Co. 211
Schwartz, S. B. 210
Smith Textile Machinery Co. 210
Snow White Bleachery Inc. 210
Solomon & Co. Inc., Robert 208
Speed & Co., Inc., James 210
Speinman, Morris 208
Stanhope Inc., R. C. 208
Stephenson, Harry 208
Textile Auxiliaries 208
Wheeler Co., Frank W. 208

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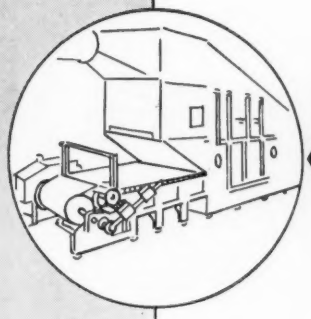

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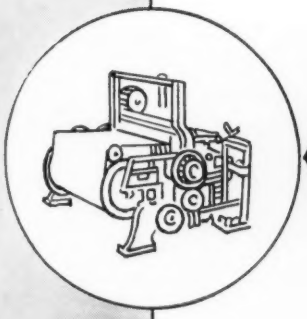

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1 Because it definitely improves the breaking strength and elasticity of the warp.

2 Because deep penetration of size prevents shedding.

3 Because it improves the hygroscopic quality of the yarn.

OTHER ADVANTAGES

1 Low shipping cost due to high concentration.

2 Contains no mineral salts.

3 Easily and completely removed from fabric.

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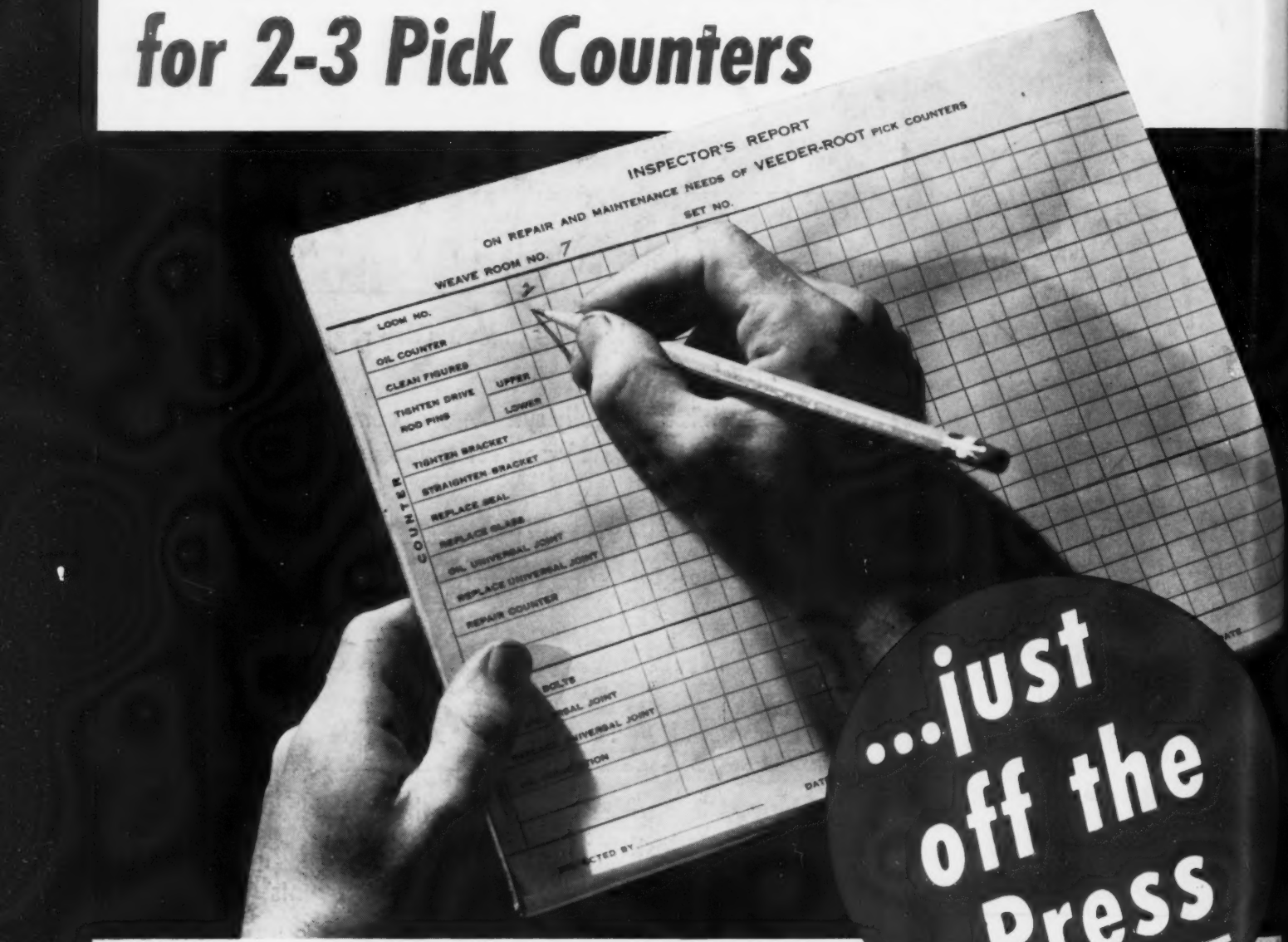

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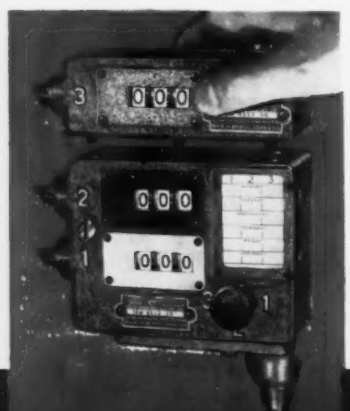

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